City of Whitehorse

Waste Management Plan 2011

CITY OF WHITEHORSE

City of Whitehorse
September 2011

EXECUTIVE SUMMARY

The Whitehorse Waste Management Plan 2011 describes strategies and measurable actions to be undertaken by Whitehorse over the next seven years (2011 – 2018). The Plan guides the development and improvement of Council's waste management practices and services to meet the needs and expectations of the community.

The Whitehorse Waste Management Plan 2011 is an update of the Waste Management Plan 2004 which has been reviewed to take into consideration the current strategic, financial and operational issues influencing waste management, and to prepare the principles for Council's new contracts for kerbside waste and recycling services in 2012. The Waste Management Plan 2004 was the guiding strategic document assisting Council to provide sustainable solutions for the collection, disposal and resource recovery from waste generated within the community.

The Whitehorse Waste Management Plan 2011 was developed within the framework of Council's Sustainability Strategy 2008 – 2013 to be consistent with Council's waste reduction goals and strategic direction for achieving sustainable waste management outcomes. The Sustainability Strategy defines the key directions in resource efficiency for Council and the community. The Sustainability Strategy contains a target for 65% of City of Whitehorse municipal waste to be recovered, recycled and/or diverted from landfill by 2014.

Key components of the Whitehorse Waste Management Plan 2011 include:

- A review of Government policies and strategies that influence the management of municipal waste and waste reduction targets;
- Providing affordable, effective, and sustainable Council waste services and programs over the next 7-years;
- Developing a local response to Government and industry programs for improved resource recovery and waste processing facilities;
- The integration and continuous improvement of Council's waste services and community waste education programs;
- Potential opportunities to improve resource recovery at the Whitehorse Recycling and Waste Centre.
- Consideration of charging options for waste services.

Council already has an extensive suite of kerbside waste and recycling collections, a successful Recycling and Waste Centre, and additional complementary resource recovery and recycling programs including some leading local government waste minimisation initiatives.

The Plan builds on those successful programs and facilities, and considers opportunities for further improvement. The plan draws on existing Council sustainability strategies and action plans with complementary actions to reduce waste as part of reducing Council and the community's ecological footprint.

The Plan provides a direction and framework with practical actions that Council and the community can implement to minimise waste production and maximise resource recovery and recycling within the municipality. Over the next 5 to 7 years, there will be waste reduction programs and new advanced waste treatment facilities developed that will support Councils to achieve higher levels of resource recovery and diversion from landfill. However, initiatives such as the national program for recycling TV's and computers could take 5-years to fully implement, and advanced waste treatment facilities are not likely to be built in the south-eastern region before 2014/2015 at the earliest.

The Whitehorse Waste Management Plan 2011 is therefore based on the use of proven services and existing best-practice technologies, and allows for a gradual transition over the next 7-years to using advanced waste processing technologies once they are proven to be effective, affordable and sustainable in reducing waste to landfill.

While many actions within the Plan can be implemented by Council alone, other actions will require Council to work with the community, industry, other Councils, and other government stakeholders to advance the waste and recovery services within the municipality.

The Whitehorse Waste Management Plan 2011 sets a revised target for 55% of Whitehorse municipal waste to be diverted from landfill by 2016. Council is unlikely to meet the Whitehorse Sustainability Strategy target of 65% diversion by 2014 as the current rate of diverting Whitehorse waste from landfill is 47%, which has been the average diversion rate for the past 3 years. To achieve a diversion rate of 65%, it will require the use of yet-to-be constructed advanced waste processing technologies to recover the large proportion of food and garden organics from household garbage bins that currently goes to landfill. It is likely that the state-wide *Towards Zero Waste* target for recovery and diversion of municipal waste (65% by 2014) will be revised downwards in the near future because of a lack of advanced waste treatment facilities in Victoria.

Setting a revised target for Whitehorse still provides a challenge for Council and the community to continue diverting waste from landfill. The diversion target will be reviewed if Council begins using advanced waste treatment facilities to extract food waste and more garden waste from garbage bins.

The waste and recycling industry is facing other major challenges, including:

- Managing landfills to new best practice standards and dealing with rising compliance costs and operational constraints;
- The viability and availability of EPA-compliant compost facilities that can cope with the volumes of garden organics being collected by Councils;
- Developing new advanced technology waste processing facilities that are viable, affordable and suitably located;
- Rising costs of waste services as a result of the increased landfill levy and higher performance standards;
- Increasing standards for closed landfills and rising compliance costs.

Actions recommended in the Whitehorse Waste Management Plan 2011 have taken these challenges into consideration.

Council's Kerbside Waste and Recycling Services

Council's existing suite of kerbside waste and recycling services meet community needs for reliable, safe and cost-effective collection and processing of household waste. Improvements to these services over the 9-year period of the current contracts have resulted in more waste being diverted from landfill and service upgrades to best-practice collection arrangements.

Contracts for the kerbside garbage, recycling, garden organics and hard waste/bundled prunings services expire in June 2012. The new contracts for garbage, recycling and garden bin services will use the same framework as the current services with updated performance and customer service standards to ensure continuous improvement. Further waste reduction and diversion from landfill will be achieved from 2013 by the reduction in the size of the standard garbage bin to 80 litres and the introduction of a 360 litre recycling bin as an option for households with a high volume of recyclables each fortnight.

There is a clear correlation between garbage bin size and the amount of waste disposed to landfill. Throughout the consultation process undertaken as part of the preparation of this Plan, strong community support was given for incentives to reduce waste to landfill. A change to a smaller garbage bin size coupled with an option for a larger recycling bin will improve waste diversion ahead of any possible introduction and use of advanced waste treatment facilities.

The option of changing over to a 360 litre recycling bin will be available from July 2012. Residents with an existing 240 litre recycling bin will be able to change over to the 360 litre recycling bin at no charge.

The larger recycling bin is designed to suit the recycling needs of larger families, small businesses, 'above-average volume' recyclers, and properties that currently share a 240 litre recycling bin.

The Whitehorse Waste Management Plan 2011 proposes that Council adopts a more sustainable 80 litre garbage bin as the standard size garbage bin for Whitehorse from 1 July 2013. The phased introduction of the 80 litre garbage bin in 2013 allows time for the new waste and recycling collection contracts to be settled operationally, and for residents and businesses to be fully informed about the proposed changes. Residents and businesses will still be able to choose the larger 120 litre or 240 litre garbage bins subject to the payment of a waste service charge consistent with the additional cost of collecting and disposing of larger volumes of garbage to landfill.

It is proposed to undertake a dedicated program to change over the 120 litre garbage bins to 80 litre garbage bins in May/June 2013. All existing 120 litre garbage bins will be changed to the 80 litre garbage bin unless residents and businesses choose to retain the 120 litre garbage bin and pay the required waste service charge. The exchanged 120 litre bins will be recycled and reprocessed into new bins.

The Whitehorse Waste Management Plan 2011 includes a review of the hard waste and bundled pruning collection arrangements. The Plan proposes a change from the current twice-yearly fixed schedule area-based service to an at-call or booked service, where residents ring and book up to 2 hard waste collections per year at the time of their choosing. The cost of providing the 2 at-call hard waste and bundled pruning collections per year would be included in the general rates. Additional collections (in excess of 2 per year) can be booked by residents, but these would be on the basis of a user-pays charge to cover the cost of providing the service.

At-call hard waste and bundled pruning collection is a more flexible service arrangement, providing collections when they most needed by residents rather than at fixed times per year. At-call collections attract fewer scavengers and there are less incidents of dumped rubbish or disturbance of the piles of waste.

Council's Whitehorse Recycling and Waste Centre

The Whitehorse Recycling and Waste Centre is one of Melbourne's largest and busiest centres for general waste, green waste and recycling. The centre operates as a commercial transfer station and accepts wastes from commercial waste collectors, residents, businesses, Council operations and occasionally from kerbside collections.

In 2010/2011, the centre received 85,782 tonnes of materials and successfully recycled 14,895 tonnes of green waste, 919 tonnes of paper & cardboard, 7,923 tonnes of scrap metal, 20,415 tonnes of clean concrete, 21,509 litres of engine oil, 1,214 tyres and 4,532 mattresses. A total of 44,850 tonnes of material was diverted from landfill resulting in an excellent diversion rate of 52.3% diversion rate.

Over the past 7 years, the proportion of materials recovered and recycled has progressively increased as a result of practices and services introduced at the Recycling and Waste Centre.

Due to site and licence constraints, there is limited scope to introduce substantial new recovery or recycling arrangements. The Whitehorse Waste Management Plan 2011 includes consideration of programs for recycling televisions, computers, polystyrene, and cooking oils, as well as progressively improving the volume of existing materials that are recovered and recycled at the centre.

Charging Options

As part of the development of the plan, a review was undertaken of waste charging mechanisms and the value of introducing a waste services charge for all of Council's kerbside waste and recycling services that is separate from Council's general rates.

The cost of providing Council's waste and recycling services must be covered by the general rates, waste charges, or a combination of rates and charges. The cost of Council's main kerbside waste and recycling services is currently included in the general rate with a separate charge levied for optional extra services such as garden organics bin collections or provision of a second or larger garbage bin.

An underlying principle of charging a property-based general rate is that all property owners should pay a fair share of rates regardless of their choice to use or not use Council services, programs and infrastructure; on the basis that over time, people will use a wide range of Council services and facilities.

The user-pays charging mechanism, to help reduce municipal waste to landfill, is a widespread and accepted practice. Typically a household or business using larger bins or more services would pay a higher waste services charge than a household or business using smaller bins or fewer services. For example, a property using a 240 litre garbage bin would have a higher charge than a property using a 120 litre garbage bin, which in turn would have a higher charge than a household or business using an 80 litre garbage bin.

There are two main options for showing the cost of providing waste services to the community. Of the metropolitan Melbourne Councils, 50% have a separate waste services charge that covers the cost of providing all of their waste services, which is shown as a separate charge to the general rates. The other 50% of Councils include the cost of their core waste services in the general rate and separately show any waste charges for optional or extra waste services (like Whitehorse).

In recent years, the escalating cost of the State Government landfill levy has significantly added to the cost of providing municipal waste services. Councils have taken varied approaches to showing the community the impact of the rising landfill levy. Most Councils have separately calculated the percentage increase or amount of rates and charges necessary to pay the landfill levy to the State Government, but there is not yet a consistent approach to how this charge is shown on the rates. Whitehorse Council currently includes the cost of paying the landfill levy in the general rates for the various waste collection services and in the gate fee for disposing of waste at the Whitehorse Recycling and Waste Centre.

The Whitehorse Waste Management Plan 2011 recommends introducing a separate charge for the landfill levy, similar to the separate charges for using larger garbage bins or the optional garden waste service. This would help identify clearly that the landfill levy is being collected for the State Government.

One of the important challenges in determining waste charges is to do so in a manner that covers the full cost of providing the services and encourages behaviour change to reduce waste to landfill, yet remains affordable for the diverse sections of the Whitehorse community.

The Whitehorse Waste Management Plan 2011 proposes the introduction of a waste service charge for the 120 litre garbage bin in 2013/2014, which would apply when the 80 litre garbage bin is introduced as the standard size garbage bin for Whitehorse in 2013/2014. A charge for using a 240 litre garbage bin will continue. These charges are consistent with user-pays principles in that the larger the garbage bin capacity and therefore the more waste that goes to landfill, the higher the charge.

Whitehorse residents will receive the following waste and recycling collection services as part of the general rates:

- Weekly collection of domestic garbage in a 80 litre garbage bin
- Fortnightly collection of recyclables in either a 120 litre, 240 litre or 360 litre recycling bin;
- Two hard waste and bundled pruning collections at-call.

Optional or extra services will be available subject to the payment of a waste service charge that varies depending upon the required service or bin capacity. Waste charges will apply for:

- Weekly collection of domestic garbage in 120 litre garbage bin or 240 litre garbage bin;

- Fortnightly collection of garden organics bin in either a 140 litre or 240 litre garden bin;
- Additional hard waste and bundled pruning collections at-call, in excess of 2 per year.

The waste service charges will be determined each year in Council's annual budget process. The garbage bin service charge is expected to increase in line with the increasing landfill levy and landfill operational costs, and to preserve the price differential to act as an incentive to reduce garbage by using a smaller bin.

Waste Education

The implementation of the Whitehorse Waste Management Plan 2011 will require increased ongoing emphasis on community engagement and education to ensure that Council's waste reduction measures are successful. It is proposed to employ a dedicated waste education officer and utilise resources from the waste service providers to assist Council, residents, businesses, schools, and the waste contractors to increase resource recovery and reduce waste to landfill. Waste education will include the development and delivery of the Waste Education Plan that covers a range of programs linked to the waste and recycling services, Whitehorse Recycling and Waste Centre, as well as additional programs such as the reduction of litter and dumped rubbish.

The implementation of new waste contracts, the proposed service changes and the changeover of garbage bins requires an intensive community engagement campaign because the changes will affect the whole community. The need to continue to reduce waste to landfill and deliver Council's waste and recycling services in a sustainable manner throughout the contract period requires ongoing community engagement and support

Review and Recommendations

Waste management goes beyond municipal boundaries requiring a planned response greater than the resources or responsibilities of Council. This Plan recognises the need for Council to work cooperatively with the community, Federal and State authorities, neighbouring Councils and other key service providers to successfully reduce the amount of waste sent to landfill. The Whitehorse Waste Management Plan 2011 continues Council's proactive approach to waste management, tempered by the need to use proven, effective and affordable waste management practices.

To ensure that Council's responses and approaches remain valid and relevant to local priorities, the Whitehorse Waste Management Plan 2011 will be reviewed and updated periodically. Reviews will consider new opportunities that may arise as a result of the changing policy environment or technology improvements.

All recommended actions in the Whitehorse Waste Management Plan 2011 can be delivered in an effective and affordable manner, consistent Council's long term financial plan. The changeover to 80 litre garbage bins will be funded through a combination of savings in landfill disposal costs, waste charges for users of the 120 litre garbage bins, and lower capital costs for bins replaced each year as a result of wear and tear. The provision of the 360 litre recycling bins will be funded through a combination of savings in landfill disposal costs and income generated by the sale of recyclables.

Key recommendations and actions in the Waste Management Plan 2011 will be reviewed as part of Council's annual budget process to ensure that the waste and recycling services, proposed programs and projects remain affordable within Council's long term financial plan.

The Whitehorse Waste Management Plan 2011 contains the following key recommendations:

1. Amend Council's municipal waste recovery and diversion target to 55% by 2016.
2. Prepare new kerbside waste and recycling collection contracts to commence in July 2012. New contracts are to be based on best practice performance and customer service standards, be cost-effective, and sustainable.
3. Reduce the standard garbage bin size to 80 litre from July 2013 to encourage further waste reduction, including implementing an exchange program for existing 120 litre garbage bins in May/June 2013.
4. Apply waste service charges for the use of 120 litre garbage bin in 2013/2014, as well as continuing with a charge for the use of a 240 litre garbage bin, to act as a financial incentive to reduce waste to landfill.
5. Consider the implementation of a separate service charge to reflect the landfill levy collected for the State Government, as part of the 2012/2013 budget process.
6. Introduce a 360 litre commingled recycling bin option with the new recycling service contract in 2012/2013.
7. Change the area-based hard waste collection system to an at-call (ring and book') system, including improved recovery and recycling of hard waste items, with residents entitled to 2 collections per annum at the timing of their choice at no additional charge, with an opportunity for further collections in excess of 2 per annum at an additional user-pays charge.
8. Trial advanced home composting systems to determine the viability of such systems to reduce the volume of food and garden waste in the domestic garbage bin, commencing in 2012/2013.
9. Continue to promote home composting by providing incentives for home composting, worm farms, bokashi bins and like products; and provide information on 'how to' compost and reduce food and garden waste.
10. Continue the user-pays garden organics collection service on an optional basis until such time as a viable and sustainable organics processing facility is established that is capable of processing the Whitehorse garden organics material.
11. Continue the current range of resource recovery and recycling arrangements at the Whitehorse Recycling and Waste Centre, and continue to look for opportunities to expand the range of material diverted from the general waste pit where practicable and viable.
12. Evaluate the viability of establishing a drop-off facility at the Whitehorse Recycling and Waste Centre for TV's and computers as part of the proposed National Product Stewardship program scheduled for implementation in 2012.
13. Develop a Waste and Recycling Education Plan that includes as a minimum:
    a. an annual program of community awareness and education about the correct use of Council waste and recycling services
    b. seminars around home composting and food recycling
    c. Increase marketing and promotion to the community so there is an increased awareness of Council's waste and recycling services
    d. Waste avoidance and waste minimisation hints and tips
    e. Campaigns to reducing littering and dumped rubbish
    f. Reducing contamination in the various bin services
14. Consider participating in a south-eastern regional contract for a new regional composting facility to be established in south-eastern region within the next 5 years (by 2015/2016).
15. Prior to the expiry of the next kerbside waste collection contracts in 2019, evaluate options for the most effective and affordable collection and processing of food waste to divert food from going to landfill.

16. Advocate to Federal and State Governments to support programs, services and infrastructure that will increase resource recovery and reduce waste to landfill, particularly product stewardship programs where industry is more responsible for the recovery of packaging and end-of-life products.

17. Seek funding from the Victorian Government landfill levy funds for resources, programs and infrastructure to increase resource recovery and waste education at the Whitehorse Recycling and Waste Centre, and to introduce best-practice kerbside bin collections using 80 litre garbage bins and 360 litre recycling bins.

Other actions included in the Whitehorse Waste Management Plan 2011 are as follows:

- Expanding education and behavioural change programs in support of appropriate use of Council services, improving the recovery of recyclable resources, and reducing waste;
- Waste reduction programs that target the reduction of the volume of food, garden and re-usable hard waste items that currently go to landfill;
- Supporting programs that recover and recycle scrap metal, whitegoods and electronic waste items such as TV's, computers and mobile phones;
- Continuing to provide and promote services at selected Council facilities for the drop-off, collection and recycling of light globes and household batteries;
- Continuing the Renew collections and/or drop-off days in 2011/12 and review previous collections to determine the most effective and viable arrangements for Renew collections beyond 2011/2012;
- Working with other Councils and the Metropolitan Waste Management Group on projects and programs that would benefit Council's waste and recycling services;
- Advocating for greater industry involvement and responsibility through product stewardship and resource recovery programs

All of the recommended actions are detailed in Section 8 Future Directions, table 8.3 Action Plan.

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List of Acronyms used

ARRT	Advanced Resource Recovery Technology
C&D	Construction and Demolition (waste)
C&I	Commercial and Industrial (waste)
CPRS	Carbon Pollution Reduction Scheme
DPCD	Department of Planning and Community Development (Victoria)
DSE	Department of Sustainability and Environment (Victoria)
Hh	Household (as in per Household)
EPA	Environment Protection Authority Victoria
KPIs	Key Performance Indicators
MGB	Mobile Garbage Bin (i.e. wheelie bin)
MAV	Municipal Association of Victoria
MRF	Materials Recovery Facility
MSW	Municipal Solid Waste
MUD	Multi Unit Development
MWMG	Metropolitan Waste Management Group
APC	Australian Packaging Covenant
PPR	Public Place Recycling
pP	per Person or Resident
RRC	Resource Recovery Centre
SIWMP	Solid Industrial Waste Management Plan
SMEs	Small to Medium Sized Enterprises
SV	Sustainability Victoria
TZW	Towards Zero Waste
VARRI	Victorian Advanced Resource Recovery Initiative
WMS	Waste Management Strategy

1 INTRODUCTION

1.1 PURPOSE

The Whitehorse Waste Management Plan 2011 (*WMP*) has been developed to provide sustainable solutions for the collection, disposal and resource recovery from waste generated within our community. The *WMP* describes strategies and measurable actions to be taken by Whitehorse over the next five years (2011 – 2016) key aims are to guide the development and improvement of current waste management practices. Sustainable approaches to waste management need to be integrated into all future policies, strategies and planning decisions made by Council.

The future direction of waste management in Whitehorse needs to be consistent with regional and state approaches. The key drivers for this Plan are:

- Government policies relating to the Towards Zero Waste Strategy and targets;
- City of Whitehorse Sustainability Strategy 2008 – 2013 that seeks to reduce the ecological footprint and deliver all Council services in a sustainable manner;
- The need to deal with the projected population increases and economic growth of Melbourne, in terms of sustainability outcomes for waste and materials recovery;
- The need to manage and reduce greenhouse gas emissions and energy and water consumption in response to climate change; and
- Government policies and strategies seeking to increase energy generation from renewable sources.

The cost of the management of waste including kerbside collection and disposal, hard waste, street sweeping and litter, and other waste management activities is a major part of Council's annual budget and therefore needs to be appropriately managed and the risks minimised. Similarly, the management of waste can be the biggest single greenhouse gas generator by Council, including pollution from waste collection and transport and methane emissions from waste decomposing in landfill.

1.2 OVERVIEW OF MUNICIPALITY

The City of Whitehorse is located just 15 kilometres east of Melbourne and covers an area of 64 square kilometres. The municipality is bounded by the City of Manningham to the north, the Cities of Maroondah and Knox to the east, the City of Monash to the south and the City of Boroondara to the west. Whitehorse's suburbs include Blackburn, Blackburn North, Blackburn South, Box Hill, Box Hill North, Box Hill South, Burwood, Burwood East, Forest Hill, Mitcham, Mont Albert, Mont Albert North, Nunawading, Surrey Hills, Vermont and Vermont South.

Whitehorse has a population of estimated at 155,174 residents with almost one-third born overseas. The 2006 Census data shows that more than 110 different languages are spoken by residents of the City. The most common languages other than English are Cantonese, Mandarin, Greek, Italian, Vietnamese, Hindi, German, Sinhalese, Korean, Indonesian and Arabic.

The 2006 Census data also reveals that approximately 66% of Whitehorse's residents are aged between 18 and 69, 21% are aged under 18 years, and 13% are aged over 70.

Housing within the City of Whitehorse varies from 'leafy green' suburban blocks to medium density apartments. There are over 8,000 businesses in Whitehorse that are predominantly office, retail and light commercial. Box Hill is a major activity centre with a large medical and education precinct. Other activity centres include Burwood Heights, Nunawading and Mitcham. The City is experiencing an increase in housing density around the activity centres and generally across the municipality.

1.3 POPULATION GROWTH AND WASTE TRENDS

Currently the City of Whitehorse has:

- 155,174 estimated resident population
- 29.4% of the population was born overseas
- 22.9% residents from non-English speaking backgrounds
- 85.6% residents Australian citizens
- 59,375 dwellings
- 2.53 persons – average household size.

In 2011, the total population of the City is estimated at 155,174. It is expected to increase by up to 7,000 people in 2031, at an average annual growth rate of 0.26%. This is based on an increase of over 5,400 households during the period, with the average number of persons per household falling from 2.56 to 2.44 (figures extracted from City of Whitehorse Community Profile).

The largest gains are expected in the area of Box Hill, with smaller gains in Burwood East, Mitcham and Burwood. The population increases are based on household growth, which in turn relates to new residential opportunities, most notably in the areas experiencing significant infill and town centre development. The forecast population growth rates are slightly lower than household growth as a result of the decreasing number of people per household. This is a pattern that is likely to affect most areas of the City of Whitehorse during the forecast period.

The growth in population and households is important when considering future waste and recycling services and for anticipating future waste generation. The total volume of waste generated tends to increase with population and household growth. The Metropolitan Waste and Resource Recovery Strategic Plan released in 2009 projects that total waste generation for Metropolitan Melbourne will increase from 7 million tonnes per annum in 2005 to 10 million tonnes per annum by 2030. The proportion of the total waste that is recycled is increasing each year and this trend is expected to continue, however there is still a significant proportion of residual waste that goes to landfill.

Planning for the waste needs of the City has taken the expected growth of population, households and overall waste into consideration. The Whitehorse Waste Management Plan 2011 contains actions to reduce the generation of waste and improve the recovery of resources that would otherwise go to landfill.

1.4 WASTE MANAGEMENT OVERVIEW

The Whitehorse Waste Management Plan 2011 incorporates the strategies and actions for the management of a variety of waste materials. The focus of the Plan is on Municipal Solid Waste (MSW) although, where appropriate, the Plan addresses Commercial and Industrial (C&I) waste and Construction and Demolition (C&D) waste.

Waste management in the City of Whitehorse involves a wide range of facilities and services including:

- Weekly kerbside collection of household waste from approximately 65,500 properties (61,000 residential properties and 4,500 commercial properties). Collection is undertaken using both 120 litre and 240 litre mobile bins.
- Fortnightly kerbside collection of recyclables from approximately 61,300 properties.
- Optional user pays fortnightly kerbside collection of green organics waste, (currently 24,400 services), using an aerated 240 litre mobile bin.
- Twice annual collection of hard waste plus bundled green waste from residential properties.
- Monthly "at-call" whitegoods/metal/electronic waste collection.
- Collection and recycling of waste mattresses through the twice-yearly hard waste collection.
- Operation of the Whitehorse Recycling and Waste Centre, located on Burwood Highway Vermont South, where green waste, metals, paper and cardboard, concrete and bricks, car batteries, tyres, oil, lightglobes and mattresses are removed from the waste stream and recycled. Commercial, industrial and household waste that can't be recycled is sent to landfill.
- Street sweeping.
- Collection from litter bins in streets and parks.
- Management of wastes generated at festivals and events.
- Waste education, community support and ongoing development of waste minimisation strategies.
- Part ownership and operation of Clayton South Regional landfill.
- Drop-off arrangements for the recycling of light globes and household batteries
- Collection of dumped rubbish

The waste and recycling services and facilities at Whitehorse are structured to meet community needs and to help Council and the community to achieve waste reduction objectives, particularly the diversion of waste from landfill.

1.4.1 Kerbside collection services

The direct cost of providing kerbside collection services for waste, recycling and green organics in the 2010/2011 financial year was $9,681,860. This cost is expected to grow in time with increasing costs of disposal, collection and waste processing. A summary of waste statistics for the main kerbside services is provided below.

	2010/2011
Number of Residential Tenements serviced	61,000
Number of Commercial Tenements serviced	4,500
DOMESTIC GARBAGE COLLECTION & DISPOSAL	
Domestic Garbage Tonnes Taken to Landfill	31,261
Annual disposal cost $'s	$2,364,670
Annual Kg per tenement	477
Annual Collection Cost	$2,514,467
Annual Cost for Collection and Disposal of Domestic Garbage	$4,906,137
Annual Cost per Tenement for the Collection of Domestic Garbage	$41.66
Annual Cost per Tonne	$156.94
RECYCLABLES COLLECTION & PROCESSING	
Tonnes of Kerbside Recyclables Collected	19,529
Annual Collection Cost	$2,142,840
Cost per Tonne	$109.73
Annual Kg per Tenement	320.15
GREEN ORGANICS COLLECTION & PROCESSING	
Number of Tenements using service as at January 2011 (average for 2010/11)	24,400
Tonnes of Green Organics Collected	9,904
Collection cost	$1,224,355
Processing cost	$421,702
Annual cost for collection and processing of green organics	$1,646,057
Annual cost per user for collection and processing	$67
Kg per user per year	350.53
Cost per Tonne	$166.20
HARD WASTE & BUNDLED BRANCH COLLECTION & MATTRESSES	
Hard waste to landfill (tonnes)	3,540
Garden prunings	1,330
Scrap metal (tonnes)	117
Total Tonnes Hard & Green	4,987
Cost for processing Green Waste	$73,150
Annual cost to collect Hard & Bundled Green Waste	$817,021
Number of Mattresses Collected	5,834
Cost to collect and recycle mattresses	$96,653
Approximate tonnes of mattresses collected (avge 35kg per mattress)	204
Total Annual Collection Cost - Hard Green & Mattresses	$986,824
Annual cost per tenement per year	$16.18

The following table provides summary data of kerbside and hard waste collected for 2010/2011, and the landfill diversion rate for the kerbside collection services. The diversion rate is the proportion of the total waste collected that is recycled or reprocessed, thereby diverting it from disposal to landfill. The higher the diversion rate, the better the environmental and resource efficiency outcome is achieved.

Kerbside Collection	***Tonnes***
Household Waste	
Domestic Garbage	31,261
Recyclables	19,529
Garden Organics	9,904
Total	60,694
Household Waste Diversion	48.49%
Hard Waste	
Landfill	3,540
Mattresses	204
Bundled Prunings	1,330
Scrap Metal	117
Total	5,191
Hard waste Diversion	31.81%
Total Kerbside Waste Stream	
Total Collected	65,885
Total Landfill	34,801
Combined Diversion	47.18%

The average landfill diversion rate for kerbside services for metropolitan Melbourne is 45%. Waste and recycling services vary across the metropolitan region, particularly in the area of garden organics and hard waste, so the diversion rate does not provide an exact comparison. It is however a useful indicator of waste management and helps to track Council's performance towards the landfill diversion targets contained in the State Government's Towards Zero Waste strategy and Council's Sustainability strategy.

Council disposes of an estimated total of 5,000 tonnes of waste from facilities that require commercial waste and recycling collections, such as Aqualink Nunawading, Aqualink Box Hill, Sportslink, Box Hill Town Hall, Council Depot, Whitehorse Centre and various community centres. Commercial arrangements vary and there is no accurate data currently available on the overall waste disposed or percentage recycled. The Whitehorse Waste Management Plan proposes that Council's data capture be extended to include waste from all Council-managed facilities.

1.4.2 Whitehorse Recycling and Waste Centre

The following table provides a summary of the total waste collected for 2010/2011 at the Whitehorse Recycling and Waste Centre (WRWC) and the proportion of this total that was recycled or reused. The waste from Council's litter bins and streetsweeping is not recycled and it is included in the residual waste total (approx 2,370 tonnes):

WRWC	***Tonnes***
Residual waste	40,932
Paper & cardboard	919
Green waste/timber	14,895
Clean concrete	20,415
Other recyclables	707
Scrap Metal	7,923
Total	85,782
Diversion	52.3%

2 STRATEGIC FRAMEWORK

2.1 STRATEGIC CONTEXT

The Whitehorse Waste Management Plan 2011 has been developed in the context of legislation at Federal and State level. These include:

- Federal Government's *National Waste Policy*, launched in late 2009;
- Environment Protection Act (EP Act) 1970, with Amendment in 2006;
- Victorian State Government's *Our Environment Our Future: Victoria's Sustainability Framework* released in 2005;
- Victorian State Government's *Towards Zero Waste Strategy* (TZW) released in 2005.

Figure 1 below illustrates how the legislation, policies and strategic plans by various agencies of government are considered and integrated with the Whitehorse Waste Management Plan 2011.

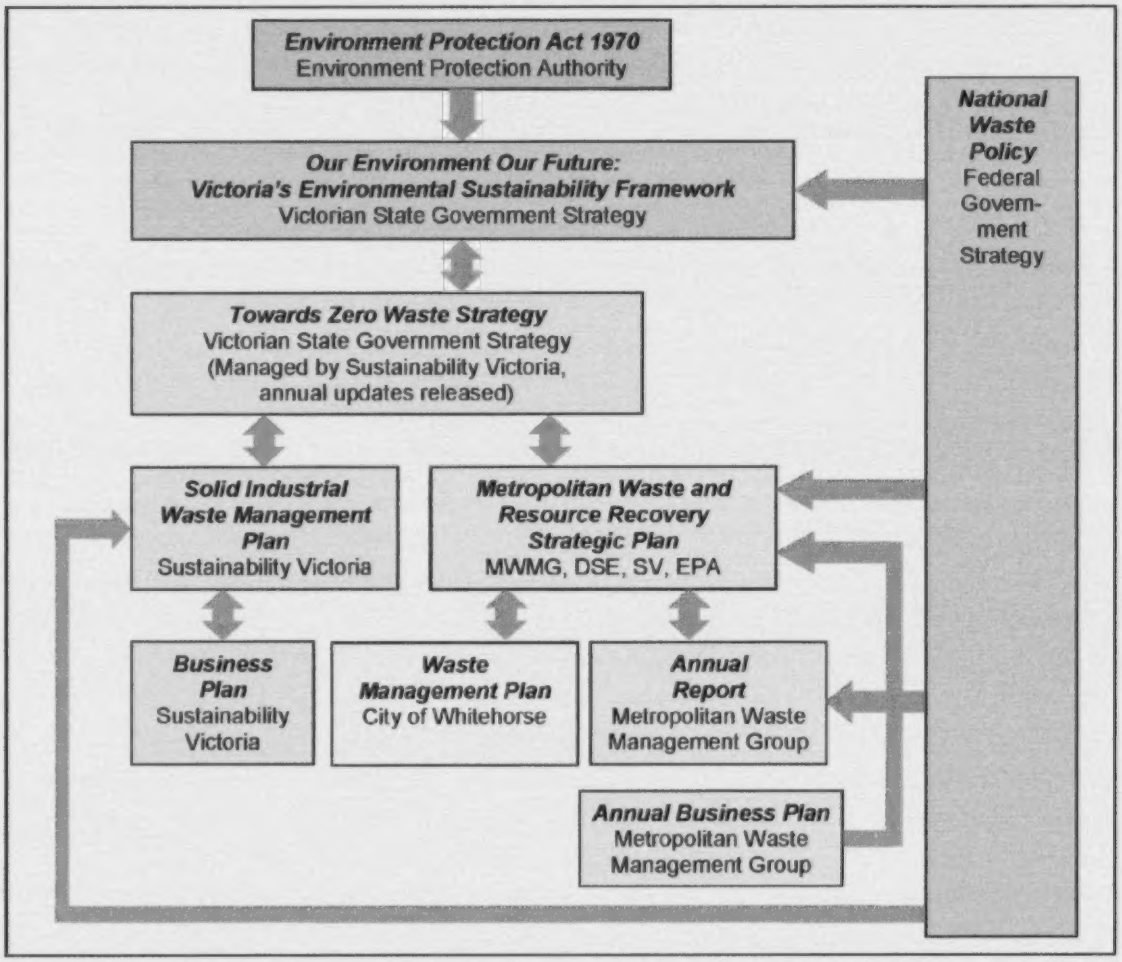

Figure 1 - Interlinking of Legislation, Policies and Plans

The Environment Protection Act provides for development of waste management and state environment protection policies. The objectives and targets in these policies and strategies have been used to prepare the *Solid Industrial Waste Management Plan* (SIWP) and the *Metropolitan Waste and Resource Recovery Strategic Plan* (the Strategic Plan). The Whitehorse Waste Management Plan 2011 has been developed to ensure that the objectives and targets of the Federal and State Government policies will influence waste management activities in the community and can be implemented at a local level.

The key principle underpinning the Waste Management Plan is the waste management hierarchy, which was included in the Waste Management Policy required by the Environmental Protection Act. The waste management hierarchy places waste avoidance as the most preferred option and waste disposal the least preferred. Policies developed by all levels of government are based on this principle.

Council continues to use the waste management hierarchy for its waste and recycling programs. The hierarchy assists Council and the community to identify the most appropriate course of action to take for programs and projects that identify potential waste reduction initiatives.
This hierarchy uses existing best practice to identify the most energy efficient and integrated practices possible for any project.

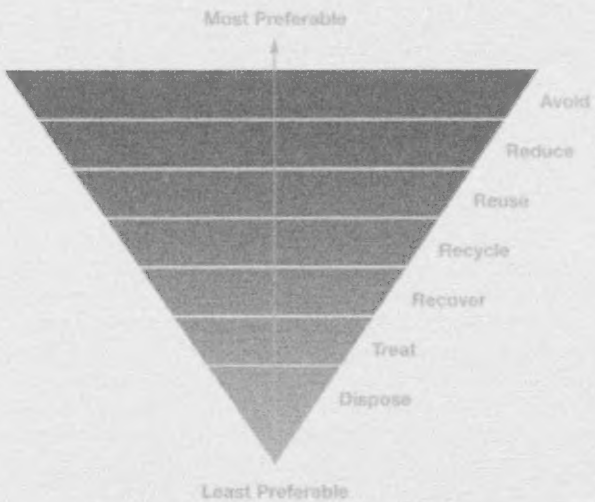

Figure 2 - Waste Management Hierarchy

Waste avoidance, reduction and reuse are the most preferred options that produce the greatest greenhouse gas reduction benefits. Avoidance eliminates the production of waste by changing purchasing patterns or product designs. Reduce is similar to avoidance in that it lessens the production of waste. Waste reuse is the transfer of waste to be used again, either in the same form or changed to become another product or material.

Waste recycling requires energy to reprocess materials such as those placed in the kerbside recycling bins. Waste recovery means capturing value in the waste material such as energy from methane capture at landfill. Waste treatment generally does not apply to municipal wastes, it more commonly applies to industrial wastes such as contaminated soils. Disposal is the least preferred option of sending waste to landfill.

2.2 SIGNIFICANT FEDERAL AND STATE LEGISLATION, POLICIES AND PROGRAMS

2.2.1 Federal Government

- ***National Waste Policy: Less Waste, More Resources*** – the policy adopted in 2011 sets the outcomes, directions and strategies for action for the next ten years with regard to waste management in Australia.

- **Carbon Pricing** – the proposed framework for reducing carbon pollution in Australia currently proposed will commence with a fixed carbon price from July 2012 for 3 years and in 2015, move to a 'cap and trade' scheme which will require emitters of greenhouse gases to acquire a permit for every tonne of carbon dioxide equivalents (CO2-e) they emit. The proposed starting price for carbon emissions will be $23 per tonne. Details of the carbon price scheme are still being finalised at the time of drafting this Waste Management Plan. The cost that this will add to Council services is yet to be determined. The specific impact on waste disposal to landfill will depend on methodologies used to assess methane emissions from landfills. The impact of a carbon price will be assessed once the scheme becomes legislation and the full details are known.

- **Australian Packaging Covenant (APC)** - voluntary initiative by government and industry to reduce the effects of packaging on the environment. Initiatives have included improved design of packaging to reduce waste and increase the amount of recyclable packaging.

- **National Television and Computer Product Stewardship Scheme** – a scheme in start-up phase in 2011 that introduces an extended producer responsibility for televisions and computers. Local government participation in the scheme is voluntary. Industry and local Councils may choose to partner with industry in the implementation of the scheme. Given local differences, these partnerships are likely to vary across the country. The scheme provides for industry-funded arrangements for the transport, reprocessing and recycling of televisions and computers, including disposal of residual waste.

  Local Councils' role could be structured in a number of ways, for example:
  - co-locate collection sites at existing facilities,
  - service contracts with local Councils to operate collection sites on behalf of industry,
  - short-term site arrangements for focussed take back events as opposed to permanent collection sites,
  - access to collection services.

  The scheme commences in 2011 and will aim to ensure that the community has reasonable access to collection services in metropolitan, regional and remote areas, within five years of scheme commencement. Council will seek the establishment of a drop-off location within Whitehorse, such as co-locating a TV and computer collection site at the Whitehorse Recycling and Waste Centre.

2.2.2 *State Government*

- **Towards Zero Waste Strategy 2005 (TZW)** - objectives of TZW are to reduce and recover solid waste and to reduce the environmentally damaging impacts of waste. The three key targets of the TZW strategy are:
  1. Reduce the amount of solid waste generated by 1.5 million tonnes per annum by 2014, compared to 2002/03.

  2. Increase the recovery rate in all solid waste generated from the current 48% (2003) to 75% by 2014 comprising:
     - 65% recovery rate (by weight) of Municipal Solid Waste (MSW) for reuse and recycling by 2014. An interim target of 45% recovery rate is established for year 2008-09;
     - 80% recovery (by weight) of Commercial and Industrial (C&I) waste for reuse and recycling by 2014. An interim target of 65% is established for year 2008-09; and
     - 80% recovery rate (by weight) of Construction and Demolition (C&D) waste for reuse and recycling by 2014. An interim target of 65% is established for year 2008-09.

  3. 25% reduction in littering behaviour compared with 2003 levels.

- **Victorian Litter Strategy – Creating Cleaner, Safer Places** (2009) – strategy to prevent litter and improve litter management practices to meet the TZW littering behaviour target and achieve clean and safe public places.

- **Victorian Advanced Resource Recovery Initiative (VARRI)** - to facilitate the development of ARRT facilities in metropolitan Melbourne (in progress).

- **Solid Industrial Waste Management Plan** (2009) - developed to establish goals and targets for solid waste management (e.g. C&I and C&D waste) in Victoria.

- **Other waste issues or initiatives** include, but not limited to:
  - Eco-Buy or similar programs that encourages the purchasing of environmentally preferable products and services;
  - current and future disposal costs and landfill levies;
  - EPA policy initiatives for landfill, litter and other wastes;
  - product stewardship programs such as Byteback;
  - contaminated soils and hazardous waste initiatives; and
  - occupational health and safety, WorkCover and Worksafe guidelines and standards.

The Victorian Government has substantially increased the landfill levy in recent years and proposes to continue to increase the levy by approximately 10% per annum until 2014/15. This has driven up the cost of disposing of waste to landfill and has raised additional revenue for funding waste, litter and environmental programs.

At the time of drafting the WMP, the Victorian Government is conducting a review of Sustainability Victoria, the organisation responsible for the implementation of Towards Zero Waste (TZW). In a separate report dated June 2011, the Victorian Auditor General has recommended that Sustainability Victoria conduct a review to assess the appropriateness of TZW's targets and has commented that ...'projections indicate that the municipal waste stream is unlikely to meet its 2014 targets'. It is therefore likely that the TZW actions and targets will be revised.

2.3 METROPOLITAN WASTE MANAGEMENT GROUP

The Metropolitan Waste Management Group (MWMG) is a Victorian state agency, established under the Environment Protection (Amendment) Act 2006.

2.3.1 MWMG Objectives and Targets

In general terms, MWMG is responsible for coordinating municipal waste management activities in Melbourne on behalf of the 30 metropolitan Councils it represents. Fulfilling this function involves:

- advising metropolitan Councils on best practices in municipal waste management and resource efficiency;
- entering into and managing contracts and arrangements to develop and facilitate waste management services for metropolitan Councils; and
- assessing the need for, and planning for, municipal waste management infrastructure and landfills in metropolitan Melbourne.

In line with the TZW strategy, the MWMG's targets include:

- A 45% recovery rate (by weight) of Municipal Solid Waste (MSW) for reuse and recycling by 2008-09;
- A 65% recovery rate (by weight) of MSW for reuse and recycling by 2014; and
- A 25% improvement in littering behaviour by 2014.

2.3.2 *Metropolitan Waste Resource and Recovery Strategic Plan (2009)*

The Metropolitan Waste Resource and Recovery Strategic Plan was developed in three separate parts: the Metropolitan Plan, the Municipal Solid Waste Infrastructure Schedule and the Metropolitan Landfill Schedule. Municipal Solid Waste consists primarily of material discarded by households for collection from the kerbside. By weight between 40 and 50 per cent of the contents of the average household bin for residual waste (or "garbage") consists of food and garden organics. Accordingly, the Strategic Plan has a focus on MSW, and the organics component in particular.

A step-change in the way the residual waste and garden organics streams are managed is proposed in the Strategic Plan. It is proposed that recyclable materials and the readily degradable organic fractions of residual wastes be recovered in purpose built advanced resource recovery technology facilities (ARRTs) across Melbourne.

To date, progress has been slow in setting up these facilities as a result of factors that include uncertainty in the level of State Government support, delays in obtaining suitable sites and planning approval; high capital costs; and long lead times in establishing contracts to guarantee supply of sufficient volumes of waste and end markets for the processed products. There is concern about the impact of using advanced technology facilities due to the substantially higher gate fees compared to landfill. The Strategic Plan is based on the premise that landfill costs will rise significantly in the coming years and the price gap between using landfill and advanced technology facilities will gradually reduce.

Sorting waste using advanced resource recovery processes

The Strategic Plan assesses the current waste management situation in metropolitan Melbourne and sets out a framework for the future management of municipal and commercial wastes. The framework and recommendations included in the Strategic plan aim to influence the waste management programs and activities of the 30 Councils of metropolitan Melbourne (see Figure 3). The intention is that individual Council Waste Management Plans and strategies will follow the strategic direction set by the metropolitan plan and contain actions that will work towards achieving the objectives of the metropolitan plan.

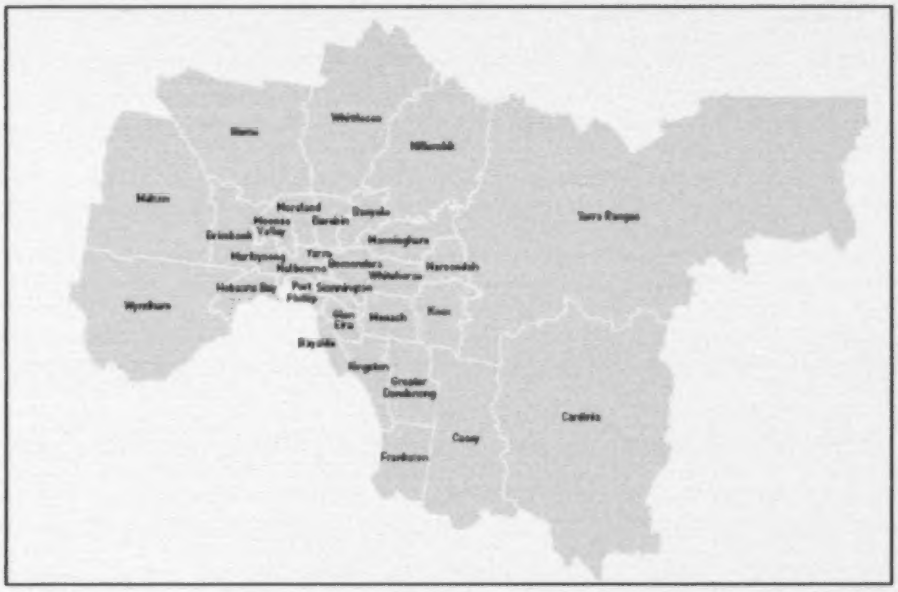

Figure 3 - Geographical Boundaries of Metropolitan Local Governments (Source: Victorian Government, 2009, 'Metropolitan Waste and Resource Recovery Strategic Plan')

2.4 WHITEHORSE PLANS, POLICIES AND STRATEGIES

2.4.1 Council Plan

The City of Whitehorse Council Plan provides the direction Council will take over the next five years. The following highlights from the Council Plan illustrate the commitment Council has to sustainability through waste management.

Strategies:

- Embed sustainability practice and principles in planning and development.
- Strengthen and contribute to an integrated transport system.
- Protect, enhance and appropriately develop open space for current and future generations.
- Pursue consistent design principles of excellence in our current and future built environment.
- Enhance our leadership role in the education and awareness of environmental practices in our community.
- Maintain and enhance Council's physical assets for long-term sustainability, safety and public amenity.

Strategic Indicators:

- Reduction in Council's greenhouse gas emissions.
- Reduction in Council's water consumption.
- Increase in the volume of municipal waste to be recovered, recycled and/or diverted from landfill.
- Environmentally sustainable design principles are applied to all new and redeveloped Council owned buildings.
- Increase in the number of planning applications that exceed a 5 Star energy rating.
- In the top 5% of Councils in the MAV Advanced STEP program for the management of physical assets.
- Continue to implement the Open Space Strategy.

2.4.2 *Council Waste Management Strategies*

The primary strategy for waste management in Whitehorse is Council's Waste Management Plan. Council's previous Waste Management Plan was adopted in 2004 and has served to guide Council's waste and recycling services until the preparation of this Plan. Waste management was considered as part of the preparation of the Whitehorse Sustainability Strategy 2008-2013, building on the base provided by the 2004 Waste Management Plan. There are operational plans for the Whitehorse Recycling and Waste Centre to ensure the Centre complies with relevant legislation, the Health Commission licence, and progressively works towards the diversion of more waste from landfill.

2.4.2.1 Sustainability Strategy

The Whitehorse Waste Management Plan 2011 was developed within the framework of Council's Whitehorse Sustainability Strategy 2008 – 2013 to ensure consistency with the key Council goals and strategic direction for achieving sustainable waste reduction outcomes.

The Sustainability Strategy 2008 – 2013 is the primary policy framework used to drive sustainable improvements across the organisation and encourage increased participation in sustainable activities.

The strategy defines the key directions in resource efficiency for Council and the Community. The third key priority in the strategy is resource efficiency, waste and recycling. The Sustainability Strategy reiterates Council's commitment to working towards the following State *Towards Zero Waste* (TZW) targets

- 65% of City of Whitehorse municipal waste to be recovered, recycled and/or diverted from landfill by 2014; and
- 30% of City of Whitehorse generated construction and demolition waste to be recovered, recycled and/or diverted from landfill by 2014.

The *Towards Zero Waste* targets are being reviewed by Sustainability Victoria. The development of advanced waste technology facilities to recover more resources from the municipal waste stream has not progressed as expected. The lack of facilities to recover and process food and garden waste coupled with concerns about the viability of markets for these reprocessed materials has meant that nearly all Councils will fall short of the TZW targets. The Whitehorse targets have therefore been reviewed in this Plan (see section 6 Future Directions).

2.4.2.2 Waste Management Plan 2004

The Whitehorse Waste Management Plan 2004 contained a comprehensive range of actions and targets for waste minimisation, organics processing and other areas such as infrastructure upgrades and electronic waste (e-waste) collection. The following service changes and waste minimisation initiatives were implemented as part of the previous plan:

- the introduction of commingled recycling bins instead of the old crates and bundled paper collection;
- the introduction of the optional fortnightly green waste bin service;
- an expanded range of materials that are recovered and recycled at the Whitehorse Recycling and Waste Centre;
- the introduction of a mattress collection and recycling service as part of the hard waste collection;
- financial incentives for residents to compost at home;
- the introduction of recycling arrangements for household light globes and batteries;
- a monthly 'ring and book' service for the collection of scrap metal, whitegoods and some electronic waste items;
- a 'Renew' trial collection for re-usable household textiles, toys, games, shoes, bags and small e-waste items;
- expansion of the recycling bin service to include small businesses, sporting clubs etc; and the collection of an expanded range of plastics in the commingled recycling bins;
- incentive programs such as gold star recycling to encourage correct recycling behaviour;
- Council's main events are run along Waste Wise principles.
- Exempting some properties from receiving Council's waste services

Where ongoing actions and targets continue to be relevant, these have been included in this Waste Management Plan.

2.4.2.3 Litter Strategy

Council is developing a new litter strategy in 2011/2012 that will address litter management and the reduction of dumped rubbish. Council has previously conducted litter and dumped rubbish campaigns targeting litter hot spots and reinforcing EPA and Clean Up Australia campaigns by encouraging improved littering behaviour.

Council's approach to litter management is based on a combination of 3 key elements – community education, provision of litter bin infrastructure, and enforcement of penalties for littering.

Council provides litter bins in its streets and parks at strategic locations where litter is generated. Council services these bins and periodically reviews the location of the bins and adjusts the number of bins in response to the degree of littering and the proximity to facilities that might result in higher incidents of littering (takeaway shops, schools etc). Council has installed gross pollutant litter traps at strategic locations to capture litter from commercial and urban areas before it can reach significant waterways such as Blackburn Lake and Gardiner's Creek. Council empties these large litter traps several times per year using cranes.

Community education about littering and litter management programs include:

- Pilot anti-littering program in Ashted Road, Box Hill and the development of a Litter Prevention Kit in different languages;
- Distribution and use of a Graffiti removal kit;
- Annual support for Clean Up Australia campaign, facilitating the clean-up of approximately 20 sites around Whitehorse each year;

- Provision of Township Cleansing services at shopping centres and high profile public sites;
- Regular street sweeping program, including intensive Autumn program in heavy leaf fall streets;
- Anti-Litter stencil program on drainage pits around schools to reinforce the message that litter in drains ends up in the waterways;
- Periodic campaigns to support EPA programs to reduce littering from cars and cigarette butt litter, and to 'dob in' dumpers
- Support for Melbourne Water and Keep Australia Beautiful to keep waterways clean;
- Support for local schools to participate in waste and litter management programs;
- In-house graffiti service.

Council's Community Laws Officers are authorised to issue penalty notices for littering and dumping of rubbish. Enforcement is difficult because littering has to be observed to be enforceable. The public can report littering incidents to the EPA who are able to issue penalty notices based on verifiable reports that include details of the date, time, nature and identity (such as a car registration) of the littering incident and litterer.

The reduction of litter and dumped rubbish is an important waste management issue and detailed litter actions will be addressed in the new litter strategy rather than this Plan.

3 CONSULTATION AND ENGAGEMENT

3.1 STAKEHOLDER ENGAGEMENT

The development of the Whitehorse Waste Management Plan 2011 included consultation and engagement with the community, Metropolitan Waste Management Group, Sustainability Victoria, other Councils, representatives from the waste industry and Council staff. Research and initial consultation established the local context for the plan. This was supported by broader internal and external consultation to consider a wide range of waste management and reduction issues, and how these might be best integrated into this strategic waste management plan.

Council's waste and recycling services should satisfy the needs of the community. Prior to the development of this plan, Council gathered community views and comment about waste management issues through a number of sources, including:

- Resident requests to Council regarding the kerbside waste and recycling collections;
- Monitoring and resolving resident complaints about the performance of Council's waste collection contracts;
- Annual performance surveys that rate Council's services and provide comment about service improvement;
- Feedback provided at community sustainability forums and workshops;

As part of the development of this plan, Council conducted a public workshop and conducted an online and mail-out survey seeking specific feedback on possible service improvements and key waste issues affecting Council and the community.

Waste-related services are delivered by a number of Council Departments and waste management affects a significant proportion of Councils resources. Consultation and engagement of key Council staff from across the organisation was conducted through workshops, interviews and phone calls to consider possible service and waste minimisation improvements.

Council's waste services operate within a metropolitan, Federal and State framework that required consideration of how the broader metropolitan and Government policies, strategies and programs impact local Whitehorse waste management. Engagement of stakeholders in this area was challenging due to the uncertain status of current State waste strategies and the review being conducted into the role and responsibilities of Sustainability Victoria.

3.2 RESULTS FROM COMMUNITY CONSULTATION

The community workshop, surveys and resident comment provided a broad range of opinions on waste issues. The key results of the community survey included:

- Awareness - Approximately 50% of respondents were aware of Council recycling programs such as scrap metal collections and free drop off of recyclables. Approximately 50% of respondents were aware of increasing landfill and green waste processing costs.
- Additional Services/ Hard Waste - Two thirds of respondents preferred the current hard waste system than a ring and book service. 86% of respondents did not want weekly pickup of recycling bins or the introduction of food waste collections. Most respondents did not want hard waste pickup from their yard. A majority (65%) of respondents were unconcerned about scavenging.
- There was some support for additional collections of unwanted household goods.
- Diversion - There was very strong support (95% positive) for Council's existing 65% diversion target by 2014.

- User Pays - 70% of respondents did not support higher fees for higher waste generators. 50% of respondents said that they would take up the option of a smaller bin if available.
- Recycling Bin - Generally there was a high level of awareness about what could be placed in recycling bins.

The key points that emerged from the community meetings and the survey are summarised below:

- The community supports Council's objective to divert more waste from landfill. There was some understanding that any significant increase in the diversion from landfill will require the recovery and recycling of food and garden organics as well as improved collection of recyclables, but it is not clear if this is well known across the community. Opportunities to increase the home composting of food and garden organics are encouraged, particularly in the absence of viable and affordable advanced technology processing facilities for garden and food organics.

- The community is sensitive to increased costs for the provision of Council services, regardless of whether they are existing services or new services. Any change to the services that would increase the costs must have an obvious benefit and be justified. Council should seek cost savings where possible.

- The concept of charging for waste services on a user-pays basis was subject to mixed views. There was strong support that higher waste generators should not necessarily be charged higher fees, yet about half of the survey respondents would take up the option of using a smaller garbage bin at a discount rate if this became available. There was specific social justice comment that any user-pays system should not penalise large families or families with young children who tend to generate more waste.

- There was community support for providing incentives for waste reduction, including financial incentives.

- Some residents would support reducing the garbage bin to an 80 litre bin instead of the current 120 litre bin, subject to addressing cost and social equity issues.

- There were mixed views about changing the current area-based hard waste collection to a 'ring and book' or at-call hard waste service. Much of the support for the current arrangement is based on familiarity and concerns that changing the service might result in increased costs. However the concept of a more flexible service that could be delivered when needed rather than at fixed times per year was appreciated.

- The community supports initiatives for the recovery and reuse of household goods such as "Renew", Resales Shops and "Garage Sale Trail". Comment was made about the amount of potentially reusable items that are thrown out in hard waste collections and at the Whitehorse Recycling and Waste Centre. Residents encouraged Council to look at opportunities to capture and divert more of this material from landfill.

- Support for recycling is very strong, with most residents understanding what can be recycled and believing that the existing recycling arrangements work well. There was feedback about insufficient capacity in the existing 240 litre commingled recycling bins for some residents and at certain times of the year. Opportunities to improve the collection of recyclables and recovery of recyclables from the residual waste stream should be pursued.

3.3 ANNUAL COMMUNITY SURVEYS

Council's waste and recycling services ranked very highly in two annual surveys conducted by independent analysts in 2010/2011. In the State Government's Local Government Community Satisfaction Survey 2011 for Councils across the State, Whitehorse Council's waste management services scored the highest result for all services for inner metropolitan Councils (79/100, which was 4 points above the score for all other inner metropolitan Councils). Data was collected via 350 random telephone interviews with Whitehorse residents.

In a separate independent random telephone survey of 350 Whitehorse residents conducted in November 2010 (commissioned for Council's annual community survey to measure performance), the household garbage and recycling services ranked 1st and 2nd out of all Council's services. The waste and recycling services have consistently ranked amongst the top 5 Council services for the past 10 years. Satisfaction with the garbage collection service has been the top ranking Council service for many years.

While these survey results indicate a high level of satisfaction with Councils existing waste and recycling services, there is always room for improvement.

Opportunities to improve the performance of Council's kerbside collections and the standard of service available to residents will be addressed in the preparation of updated waste and recycling service specifications for the new kerbside contracts that are due to commence in July 2012.

4 CURRENT WASTE MANAGEMENT

4.1 COUNCIL'S APPROACH TO PROVIDING WASTE SERVICES

Council's kerbside waste and recycling collection services are designed to meet the average domestic waste disposal needs for residential households. The services have been progressively improved over time and the current suite of collection services is comparable with local government best practice. Council's residential garbage and recycling collection service is available to small to medium-sized businesses and other non-residential organisations whose waste needs can be satisfied by a domestic waste collection service. Larger businesses or organisations that produce high volume, commercial or industrial waste must engage the services of a private commercial waste collection contractor.

Council uses suitably experienced and qualified contractors to provide its kerbside waste and recycling collection services. Contractors are appointed through a competitive public tender process every 7 to 10 years. Kerbside waste and recycling collection contracts are typically based over 7 to 10 years to allow for the multi-million dollar cost associated with providing new waste collection vehicles or new bins at the start of each contract to be spread over the period of the contract (amortisation). Long-term contracts ensure that waste and recycling services can be provided in a reliable and affordable manner.

Long-term contracts are particularly beneficial for the amortisation of any capital costs associated with the provision of a large number of new bins, such as the introduction of Council's garden bin collection service in 2006 or the introduction of recycling wheelie bins to every household in 2005 replacing the previous crate and bundled paper recycling service.

Essential garbage and recycling collections that benefit every household are funded as part of Council's Rates. Optional collections such as the garden bin service that may not be required by every household are funded on a separate user-pays basis.

The Whitehorse Recycling and Waste Centre is operated by experienced Council staff for the benefit of local residents, businesses and organisations that have large volumes of waste for disposal, or their waste is commercial or industrial by nature. The Centre serves as a regional recycling and waste facility because of its capacity to deal with large volumes of waste. The Centre is operated in accordance with commercial principles on a user-pays basis, to ensure that the gate fees cover the management and operational costs. Whitehorse residents are regular users of the facilities at the Whitehorse Recycling and Waste Centre.

4.2 OVERVIEW OF CURRENT KERBSIDE WASTE CONTRACTS

Council's current kerbside waste and recycling contracts are due to expire on 30 June 2012. The common expiry date for the domestic garbage, recycling, garden organics, hard waste and bundled prunings, and mattress collection contracts allows for these kerbside services to be tendered as a suite of contracts that should attract the most competitive prices due to economies of scale. The contracts for sorting and processing the collected recyclables and for processing the collected garden organics expire at the same date and will be tendered as part of the suite of waste and recycling services.

The new contracts will be long-term (7-years) and based on best practice specifications. The provision of reliable services, high quality customer service and resources at a competitive price will be key criteria considered in awarding the new contracts. Council will give consideration to contractors with fuel-efficient fleets and environmentally sensible processes and procedures.

The new contracts will be guided by recommendations from this plan such as bin sizes, service options and waste minimisation initiatives.

Waste and recycling collection contracts require a long lead time before commencing, due to the need to purchase a large number of new collection vehicles that typically require more than 6 months to manufacture and fit out. Establishing new contracts requires careful planning and seamless handover to ensure that collection schedules are maintained and there is minimal interruption to service.

4.3 BIN SIZE

The 120 litre garbage bin is the most common garbage bin collection system in use in Victoria with 63% of Councils using this system as at 2010/2011. Most Councils offer a range of garbage bin sizes from 80 litre to 240 litre, and there is an increasing trend towards Councils using 80 litre bins as the preferred garbage bin. Sustainability Victoria surveys over the last 9 years have shown that as the bin size increases, the corresponding household waste yield increases. Smaller bins, such as the 80 litre bin, produced on average 402 kg of garbage per household per year, compared to the 120 litre bin that typically yields an average of 464 kg per household (ie, the smaller bin helps to achieve a 13% decrease in waste disposal to landfill).

Whitehorse garbage bin average yield per bin per year is 477 kg. This includes the collection of garbage from approximately 4,500 small businesses that use Council's domestic garbage service, which may account for the slightly higher than average yield as business bin weights are typically heavier than domestic household bin weights.

A proven method to reduce the volume of waste that goes to landfill is to reduce the size of the garbage bin. Deciding on an acceptable minimum size garbage bin that will satisfactorily cater for 'average' household use is difficult. Waste disposal needs vary from household to household, depending upon the number of people in the household and their dedication to minimising their waste. There are also seasonal factors - the tonnes of waste going to landfill increases significantly in Spring and Summer each year. This Plan proposes reducing the standard size garbage bin to 80 litres but retaining options for residents and businesses to use larger size bins if needed.

The 240 litre recycling bin is used by nearly all Councils in Victoria. Fortnightly recycling collections using the 240 litre bin have proved to be satisfactory for most households for many years. With the increase in the amount of recyclable packaging available and improved recycling sorting technology that has enabled the collection of a wider range of recyclable items in recent years, the 240 litre recycling bin may not always be adequate to meet the recycling needs for all households. Whitehorse residents are good recyclers and there are seasonal factors with peak recycling yields in Spring and Summer. Increased capacity may be required to reduce the potential for overflow into the garbage bin. This Plan proposes introducing a 360 litre recycling bin for households or businesses with higher volumes of recyclables and reducing the standard garbage size to 80 litres.

4.4 WASTE COMPOSITION AND QUANTITIES

4.4.1 Waste and recyclables collected at the kerbside in the municipality

The quantities and composition of waste and recyclable materials collected from Council's kerbside bin-based services are detailed below. Data prior to 2007/2008 is not presented as this precedes the introduction of the garden organics collection service.

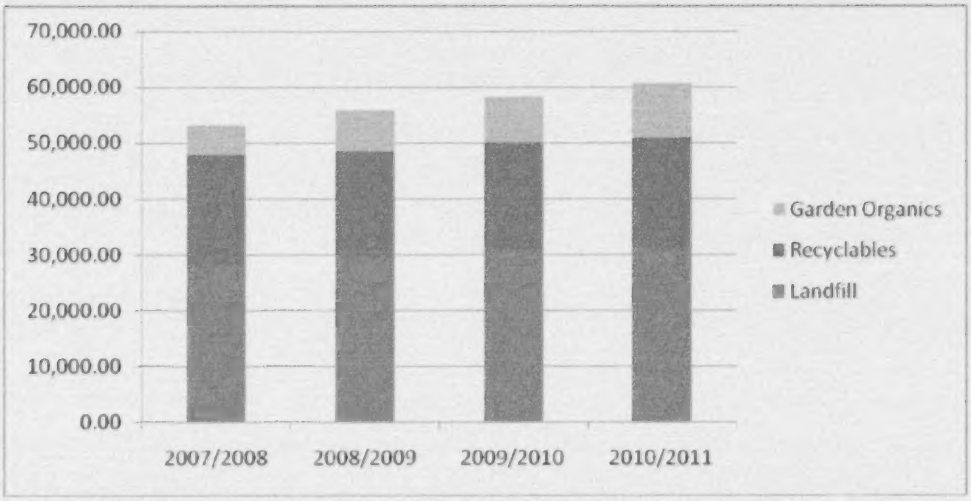

Figure 5 - Tonnes of waste and recyclable materials collected from household bin services 2007/2008 to 2010/2011

	2007/2008	2008/2009	2009/2010	2010/2011
Landfill	28,056	29,347	30,798	31,261
Recyclables	19,890	19,108	19,281	19,529
Garden Organics	5,210	7,487	8,129	9,904
Total	53,156	55,942	58,209	60,694
Diversion	47%	48%	47%	48%

Table 1 - Waste and recycle Collection Tonnes from Council's bin-based services

The table and the figure above indicate that the current diversion rate for Whitehorse kerbside collected bin waste is 48% (excludes hard waste).

4.4.2 *Waste Bin Audit*

Council periodically conducts detailed audits of the contents of a random sample of household bins, the most recent being in February 2010. The audits are anonymous and provide a snapshot of the community waste practices such as the amount of food waste being disposed to landfill, the proportion of materials in the garbage bin that could be recycled, and the proportion of non-recyclable materials in the recycling and garden organics bins. The audit was undertaken using the *Guidelines for Auditing Kerbside Waste in Victoria* developed by Sustainability Victoria.

The audit was carried out on almost 900 randomly selected household garbage, garden and recycling wheelie bins placed out for kerbside collection in each Council collection area, over a total period of ten days. The sample was of sufficient size and the analysis was thorough to ensure that the results of the audits were accurate and representative of the City of Whitehorse waste stream. Whilst no individual properties were identifiable, separate groups of bins were collected from houses and units, and those with and without a garden bin service. This allowed more detailed analysis that can be used to design subsequent community waste education programs and to identify waste minimisation opportunities.

Household Type	**Residual Waste**	**Fully Commingled Recycling**	**Garden Organics**	**Total yield per household**
	Yield (kg)			**(kgs/fortnight)**
House with an optional garden service	12.19* p/wk (24.38 /f'night)	16.87	15.23	54.43
	10.14** p/wk (20.28 /f'night)			
House without an optional garden service	10.24 p/wk (20.48 /f'night)	12.49	N/A	35.22
Units	6.76	13.37	14.88	41.77
* = Garden Organics Week ** = Fully Commingled Recycling Week				

Table 2 - Results of Audit - Waste Generated

Collection Type	**Commingled Contamination Rate**
House fully commingled recycling **with an** optional garden service	5.38%
House fully commingled recycling **without an** optional garden service	12.19%
Units fully commingled recycling	13.43%

Table 3 - Audit Results - Contamination in Waste Bins

4.4.2.1 Audit Analysis

Key results from the waste audit include the following:

- Food waste comprises the biggest single category of residual waste in the garbage bin, ranging from 44% in households without a garden organics service up to 53% in multi-unit dwellings.
- Garden waste comprises the second largest category of residual waste in the garbage bin ranging from 12% in households with a garden organics service up to 20% in households without a garden organics service.
- Households with a garden organics service place less garden organics in their garbage bin than households without a garden organics service (1.5 kg/week compared to 2.1 kg per week).
- Multi-unit dwellings place very little garden organic waste in their bins (0.2 kg/week).
- Potentially recyclable non-organic material (such as plastics, cans, paper, cardboard etc) placed in the garbage bin ranges from 8.1% for households with an organics service in the organics collection week to 13.7% for the same households in the recyclables collection week. The proportion of recyclables in the garbage bin for households without a garden organic collection was 8.9% and 12.9% for multi-unit dwellings.

4.4.3 Waste quantities from Hard Waste and Bundled Prunings Collection

Council's twice-yearly hard waste and bundled pruning collection separates and recycles the bundled prunings, scrap metal and mattresses. All other hard waste is taken to landfill as currently it is not commercially viable to recover and recycle all of the potentially re-usable or recyclable materials from the hard waste piles.

	Landfill tonnes	Bundled Prunings tonnes	Metal tonnes
2010/2011	3540	1330	117
2009/2010	3,640	1,281	400
2008/2009	2,946	947	330
2007/2008	3,938	673	344

Table 4 - Tonnes of waste and recyclable materials from Hard and Green Waste collection service

2010/2011	2009/2010	2008/2009	2007/2008	2006/2007
Number	Number	Number	Number	Number
5,834	4,678	4,717	5,108	5,061

Table 5 - Quantities of Mattresses collected and recycled as part of Hard Waste service

4.5 WHITEHORSE RECYCLING AND WASTE CENTRE

The Whitehorse Recycling and Waste Centre (WRWC) is located at 678 Burwood Highway (opposite Morack Road), Vermont South. This facility serves as the main waste drop-off point for domestic and commercial customers in Whitehorse and the surrounding region. The Centre is open 7-days per week all year round, except for Christmas Day and Easter Friday.

The Whitehorse Recycling and Waste Centre accepts a comprehensive range of non-hazardous solid wastes and continues to seek opportunities to divert material from landfill. The centre has differential pricing mechanisms to encourage separation of recyclable material from the landfill waste stream. Recyclables such as paper, cardboard, scrap metal, glass, household batteries and light globes, and small quantities of engine oil can be dropped-off at no charge. Reduced fees apply for the disposal of clean garden waste and mattresses that are subsequently recycled.

Over the past 7 years, the proportion of materials recovered and recycled has progressively increased as a result of practices and services introduced at the Whitehorse Recycling and Waste Centre.

The WRWC currently recovers and recycles:

- Mattresses (4,532 recycled in 2010/2011)
- Tyres (1,214 recycled in 2010/2011)
- Ferrous Metals (7,923 tonnes recycled in 2010/2011)
- Non-ferrous Metals (45 tonnes recycled in 2010/2011)
- Glass (35 tonnes recycled in 2010/2011)
- Clean Garden Organics and some timber (14,895 tonnes recycled in 2010/2011)
- Paper and Cardboard (919 tonnes recycled in 2010/2011)
- Motor Oil (21,509 litres recycled in 2010/2011)
- Automotive batteries, small domestic batteries (3,154 recycled in 2010/2011)
- Fluorescent tubes and light globes

The WRWC operates as a commercial transfer station and accepts wastes from commercial waste collectors as well as Council's municipal operations. The waste that cannot be recycled is bulk hauled to landfill facilities in both the east and west of Melbourne.

The Whitehorse Recycling and Waste Centre has its own Operations Plan and Business Plan to ensure that the facility is managed effectively and safely. These plans define the direction and priorities for Centre, as well as defining key waste management practices and performance measures. The Operations and Business plans are due for review in 2012.

The key principles of the Whitehorse Recycling and Waste Centre Operations and Business Plans are:

- All operations are to be carried out in a safe and efficient manner compliant with Occupational Health and Safety Regulations and Best Practice Guidelines for Transfer Centres;
- Public safety is critical at all times;
- The materials accepted at the Centre must comply with the requirements of the Health Commission licence and must be non-hazardous and non-toxic;
- Provision shall be made for the separation and recovery of materials that can be recycled in an effective and sustainable manner;
- The Centre shall operate 7 days per week except for Christmas Day and Good Friday;
- The Centre operates a surplus budget to ensure that it is self-sufficient.
- Opportunities will be sought to continuously improve resource recovery and reduce waste to landfill

Due to site and licence constraints, there is limited scope to introduce substantial new recovery or recycling arrangements. The Centre has already achieved an excellent diversion rate from landfill of 52% of the waste coming into the facility. However there is some consideration in this Plan for

recycling televisions, computers, paints, polystyrene, and cooking oils; as well as progressively improving the volumes of existing recyclables.

The location of the facility adjacent to Eastlink makes the WRWC a significant strategic resource for waste management as it could act as a transfer point for municipal solid waste to a future advanced waste treatment facility.

4.6 WASTE MANAGEMENT FACILITIES USED BY WHITEHORSE

Whitehorse City Council utilises a range of waste disposal and resource recovery facilities to maximise the recycling of the materials collected and to ensure the safe and proper disposal of materials that can't be recycled. With the exception of Council's own Whitehorse Recycling and Waste Centre, all of these facilities are located outside the municipality, some at quite a distance away. Waste and recyclables are transported to the respective facilities several times each day. Large scale processing facilities and landfills are typically located in industrial zones or in outer metropolitan areas due to planning and licence requirements for a significant buffer from residential zones.

4.6.1 Landfills:

Whitehorse Council is a part-owner of the Clayton South Regional Landfill along with 4 other south-eastern metropolitan Councils. Council disposes of a portion of its kerbside garbage at this facility and is jointly responsible with these other Councils for the management and operation of the landfill. The member Councils will be responsible for site restoration and aftercare once the active landfill phase is completed by 2017/2018 (estimated lifespan as at 2011).

The remaining portion of Council's garbage is disposed at the Sita landfill in Hallam under a metropolitan waste management contract facilitated by the Metropolitan Waste Management Group (MWMG). Under the same contract, the non-recyclable waste from the Whitehorse Recycling and Waste Centre is bulk-hauled to Wyndham City Council's landfill at Werribee. Council can achieve this in an efficient manner by the use of its large prime movers and trailers. During peak seasons when waste volumes are high, a portion of the bulk-hauled waste is taken to Sita landfill in Hallam. The different landfill arrangements provide Council with flexibility in disposal sites to suit the various collection schedules.

All landfills used by Whitehorse are licensed by the EPA and are required to comply with stringent environmental controls including landfill gas collection and leachate management.

4.6.2 Recyclables:

Council's kerbside recyclables are processed in dedicated materials recovery facilities to ensure that all recyclable materials are reprocessed and genuinely recycled. Council's current recyclables processor Visy Recycling operates high technology equipment to sort the various streams of recyclables into their separate components such as plastics, glass, cardboards, aluminium, steel etc. Some recyclable streams such as plastics are further sorted into different polymer streams through the use of high-technology optical scanners.

The use of improved technologies for sorting and reprocessing recyclables has reduced the component that cannot be recycled to less than 10% of the incoming materials. The non-recyclable component mainly consists of non-recyclable items placed in the recycling bins in the first place, rather than any losses in processing. Community education about correct recycling practices is an important component in maximising the amount of recyclables recovered and re-processed.

The ability for processors to effectively recycle all recyclable materials and be innovative in improving sorting technology and end-use markets will be key criteria in Council's new recyclables sorting contract to be tendered in 2011/2012.

4.6.3 Garden Organics and Prunings:

The green waste and clean timber dropped off at the Whitehorse Recycling and Waste centre is currently mulched and reprocessed for the horticultural and agricultural industries by Bark King, specialty mulching contractors.

The kerbside garden bin organics and the bundled prunings are mulched and blended with other organic material for recycling as quarry and landfill site rehabilitation cover material at various locations. This arrangement commenced in 2010 following the closure of several regional composting facilities that were previously processing Council's garden organics into quality compost. The processing facilities were using open windrow composting technology that resulted in odours adversely affecting nearby residential areas, and following persistent objections and EPA action, the facility closed down in 2010 leaving a significant shortfall in available garden organics processing facilities for Melbourne.

Council will continue to use the interim garden organics processing arrangements until suitable alternative arrangements can be found. This Plan contains an action to consider participating in a regional south-eastern contract for a high-technology enclosed composting facility that will be built and operated by private contractors, but a number of Councils will commit to using it. The affordability and viability of Whitehorse using such a facility will be assessed in 2011/2012.

4.6.4 Transport:

The resources involved in transporting waste and recyclables are substantial and costly. The environmental footprint as a consequence of transporting Whitehorse waste and recyclables over long distances has not been calculated but it is expected to be sizeable. The growth in the practice of transfer of wastes from East to the West of Melbourne is of strategic importance and a triple bottom line assessment of transfer of waste across town versus use of disposal sites in the east is required in the development of the next Metropolitan Landfill Schedule. For Whitehorse, it has proved to be efficient and economical to bulk-haul waste material from the Whitehorse Recycling and Waste Centre to landfill in Werribee.

The reduction of the generation of waste forms part of this Plan. The efficient transport of waste is part of the business plan for Council's Whitehorse Recycling and Waste Centre and will be considered in the assessment and awarding of Council's new kerbside collection contracts in 2011/2012.

A summary of current facilities and processing arrangements are as follows:

Council Service	Disposal facility	Wastes Accepted
Kerbside garbage	Clayton South Regional Landfill SITA Hallam Landfill	Municipal Solid Waste
Whitehorse Recycling & Waste Centre	Wyndham Werribee Landfill SITA Hallam Landfill	Municipal Solid Waste
Kerbside recyclables	VISY Materials Recovery Facilities Springvale & Heidelberg	Commingled Recyclables
Kerbside garden organics	Interim MWMG arrangements for mulching and site rehabilitation	Garden Organics Bundled prunings

Council Service	Disposal facility	Wastes Accepted
Hard waste	TPI inert landfill, Clayton South	Hard waste
Mattresses	Dreamsafe Recycling facility, Moorabbin	Mattresses from hard waste and WRWC
Litter Bins	Whitehorse Recycling & Waste Centre	Municipal Solid Waste
Streetsweeping	Whitehorse Recycling & Waste Centre	Municipal Solid Waste
Green waste at Whitehorse Recycling & Waste Centre	Bark King Mulching facility, Yarra Ranges	Clean green waste
Other recyclables at Whitehorse Recycling and Waste Centre	Various specialty recycling contractors	Scrap metal, paper & cardboard, engine oil

Table 8- Waste Disposal and Resource recovery facilities utilised by Whitehorse

4.7 OTHER WASTE COLLECTION & DROP-OFF SERVICES

4.7.1 Public Place Recycling:

Public Place Recycling (PPR) is the provision of a dedicated recycling bin as a street fixture in a public place such as a shopping centre for recyclable materials such as bottles, cans, paper and cardboard. Council currently has 8 public place recycling bins provided in and around central Box Hill shopping centre that were installed over the past 5 years on a pilot or trial basis.

While PPR provides some benefit in diverting recyclable products from the waste stream, it is often subject to high levels of non-recyclables being placed in the bins, that at times result in contamination levels so high that the bin contents cannot be recycled. While the performance of PPR bins and the understanding of the public are improving over time, the cost-effectiveness of installing PPR bins in every major shopping centre is yet to be proven. Servicing and sorting costs of PPR bins are considerably higher than normal recycling bins, for a lower yield of recyclable materials.

Installation costs are higher for PPR bins. The bins require good signage and because bins form part of the streetscape, they are usually enclosed in steel surrounds similar to the street litter bins. A more extensive rollout of PPR would be very costly from both a capital and servicing perspective. The steel frames can cost in excess of $2,500 per facility and collection from these systems is also costly. Expansion of the Public Place Recycling bin network is not proposed at this time but the existing public recycling bins in and around central Box Hill will remain and will continue to be monitored.

4.7.2 Detox Your Home

Sustainability Victoria offers a program for the collection and safe disposal of household chemicals and some potentially hazardous waste items. The Detox Your Home program operates in two ways – as a mobile service that visits different regions on a periodic basis, and with regional permanent sites that cater for the less toxic and dangerous items such as paint, oils, car batteries, household batteries, fluorescent tubes and compact fluorescent globes (CFLs).

Whitehorse Council has successfully hosted the mobile Detox program at the Council Depot every few years, the most recent being in April 2011. These drop-off days are very popular and yield significant volumes of materials. This Plan contains an action to advocate for the mobile Detox program to be held at Whitehorse on a more frequent basis.

The nearest permanent Detox site is at neighbouring Monash City Council's Transfer Centre in Notting Hill. These sites are funded by the Victorian Government and limited funding and few suitable locations are available. In the mid-2000's, Whitehorse Council sought funding for a permanent Detox facility to be established at the Whitehorse Recycling and Waste Centre, but was not successful in gaining support or funding from the Victorian Government.

4.7.3 Byteback

Computers, printers, monitors and other computer parts can be recycled free of charge as part of a computer industry-funded scheme called Byteback that has been extended until 2012 until the national scheme is introduced. The nearest location to Whitehorse is at neighbouring Boroondara Council Transfer centre in Camberwell. The Byteback scheme recycles a wider range of computer components than Council's monthly 'ring and book' metal and whitegoods program. The Byteback program is expected to be incorporated into the National TV and Computer recycling scheme being launched by the Australian Government in 2011/2012.

4.7.4 Mobile Muster

Mobile phones can be recycled though this industry-funded program available at selected telephone, Australia Post and retail outlets. Unwanted mobile phones can be dropped off or mailed back for recycling. Council promotes the program in its *Recycling and Waste Services Guide* that was distributed to all households, and phones collected as part of the Renew collection are recycled through the Mobile Muster program. There are many outlets in Whitehorse to recycle unwanted mobile phones. This Plan proposes that Council increases its promotion of the Mobile Muster program and the available outlets for recycling mobile phones.

4.7.5 Renew

Since 2010, Council has conducted an annual kerbside collection of unwanted but potentially re-usable household goods using the recycling bins on the day after the normal recycling collection. Initially conducted on a trial basis, the use of existing recycling bins for a special, separate household goods collection followed the successful operation of Renew collections by the City of Moonee Valley.

In 2010 Council collected 82 tonnes of materials over a two-week period using the 'day-after' Renew collection, however not all of the material collected was of suitable quality for re-use or recycling. During collection, some items broke or became contaminated by the non-reusable items placed in the bins. There was a good level of participation in the 2010 Renew collection (almost 6,000 households) and from the total collected, 59 tonnes were recycled and diverted from landfill.

In 2011, Council repeated the two-week Renew kerbside collection using the recycling bins on the day after the normal recycling collection, this time emptying the bins manually to minimise breakages and contamination. Council restricted the range of goods eligible for the 2011 Renew collection seeking to minimise the amount of non-recyclable materials placed in the bins. A total of 22 tonnes of material was collected from 4,800 households that participated in the day-after collection, of which 21 tonnes was recycled and diverted from landfill.

In addition to the kerbside collection, the 2011 Renew program included a separate drop-off day at the Council Depot for larger household goods such as TV's, computers and furniture. The drop-off day was scheduled just prior to the Winter hard waste collection to encourage residents to use the Renew program where goods get recycled rather than the hard waste collection where these types of goods typically go to landfill. A total of 26 tonnes of materials were dropped off by 721 residents, an excellent response for one day. Comparable drop-off days held in NSW typically yield about half the tonnes and

have fewer participants. Furniture items were collected by two leading charity organisations and the bulk of the TV's and computers were recycled at a sorting facility that employs people with disabilities.

The combined 2011 Renew program was successful but resource-intensive. The Waste Management Plan recommends that the renew collections be reviewed in 2011/2012 to ensure that future Renew collections remain value-for-money and effective in diverting waste from landfill.

4.7.6 Household batteries and light globes

Since 2009 Council has managed a service enabling household to recycle all used and unwanted light globes. This came about as the old-style pear-shaped incandescent light globes were phased out and no longer allowed into Australia. CMA EcoCycle, a Melbourne-based light-globe recycling organisation, supplies wheelie bins and boxes to collect the globes. Almost all of the components, including mercury from the compact fluorescents, are recycled.

In 2010 Council set up a recycling service for residents to recycle used household batteries. The service accepts all domestic alkaline batteries up to the size of a 9 volt battery at all customer service centres and at the Whitehorse Recycling and Waste Centre.

4.7.7 Litter Bins

Council has over 400 litter bins located in shopping centres, parks, at bus stops, sporting reserves and various other public locations near sources where litter is generated. Litter bins are typically provided inside a metal enclosure in shopping centres and at high profile locations, to assist with clear identification of the public litter bins and ensure that the appearance of the street, park or shopping centre is enhanced. The bins are intended for public litter, not trade or domestic waste.

These litter bins are serviced at schedules that vary, depending upon the volume of litter that is regularly placed in the bins. Litter bins in major shopping precincts such as Box Hill are serviced 4 or 5 times per week during the peak summer season, whereas litter bins located in the vicinity of small shopping centres may only require servicing once or twice per week. Sporting ground litter bins require more servicing during football season than cricket season, and Council has developed a collection schedule that reflects the different volumes generated and seasonal factors.

The purpose of public litter bins is to help to maintain a neat and tidy streetscape or park. The number of litter bins provided and their location are reviewed periodically to remove bins that may no longer be required, or add bins where the generation of litter becomes a problem that can be resolved if a litter bin was installed. Experience at Councils across Australia is that the presence of a litter bin does not guarantee to resolve a littering problem, or that there won't still be litter dropped in the vicinity of the bin. Incidents of commercial and household waste being dumped in Council litter bins continues to be an issue of concern, because bins become over-filled and further litter spills onto the street. This drives up the cost of clearing up litter.

Council disposed of 330 tonnes of litter from litter bins in 2010/2011.

The litter bin service will be considered further as part of the development of a new Litter Strategy that is being developed in 2011/2012 separately to the Whitehorse Waste Management Plan 2011.

4.7.8 Streetsweeping

Council's streetsweeping service contributes to the collection of litter and waste that falls or is thrown onto the roadside. The streetsweeping program operates on a varied schedule, sweeping streets on average every 3 to 4 weeks for most of the municipality. The materials collected as part of the streetsweeping program are taken to the Whitehorse Recycling and Waste Centre for disposal to landfill. Although there are often a high proportion of the sweepings that is organic material such as leaves, this cannot be recycled because of the dirt, rubbish, packaging and other contaminants that are swept up at the same time. In 2010/2011, 2009 tonnes of streetsweepings were disposed at the Whitehorse Recycling and Waste Centre.

4.7.9 Syringes

Council provides syringe containers in public toilets and in various Council facilities for the safe disposal of waste syringes. The syringe containers are emptied on a regular basis by a specialist contractor to ensure the safe handling and proper disposal of the syringes.

4.8 COMMUNITY WASTE EDUCATION

Whitehorse currently undertakes a range of education activities targeted at reducing the generation of waste and increasing the diversion of waste from landfill. These include promotion of home composting and promotion of recycling as well as general waste education programs. Programs that are currently undertaken include the following:

- Gold Star recycling program – residents who commit to recycle correctly receive a gold star for their recycling bin, gold star recyclers can win a prize, based on driver observation of correct recycling practices.
- Home Composting program – waste minimisation incentive for food/organic recycling at home – if residents spend $100 or more on eligible composting products, they can apply for one-off $30 rebate on their purchases.
- National Recycling Week –themed promotion of correct recycling practices – activities and incentives vary year to year.
- Visits to Recycling MRF/Banyule recycling education centre – twice yearly tours run for residents.
- Spring Festival – inter-active displays and activities of various recycling and waste minimisation practices.
- Waste Forums – variously themed forums with guest speakers, usually held several times per year, may be run as part of broader sustainability events such as Sustainable Living Week.
- Schools program – recycling and waste minimisation are part of AussieVic program, and Council pays for a limited number of local schools to participate in AussieVic program.
- Waste Services Guide and various fact sheets – written information available at customer service centres.
- Targeted information about correct waste and recycling collection practices – standard letters and support information sent to resolve collection problems reported by drivers, residents or waste staff.
- Whitehorse News articles – occasional waste and recycling stories in monthly Council newsletter that is delivered to all households.
- Waste Wise program – major Council events run along waste wise principles.
- Office waste minimisation programs including food recycling via worm farms, office desk recycling, commingled recycling and a paper reduction campaign.
- Information available at the Whitehorse Recycling and Waste Centre

The delivery of waste education to residents is both necessary and challenging. Residents comprise a diverse and changing group with widely divergent needs and levels of knowledge about waste management. Education programs need to deliver basic information on use of waste systems as well as providing additional information to those residents who are seeking a greater understanding of how to sustainably manage their waste.

Regular community education and awareness programs are required to influence behaviour and assist residents to understand the correct materials to place in waste and recycling bins, and to support the rollout of new infrastructure initiatives and collection systems. Most residents want to 'do the right thing' and as such, education is focussed on providing the correct information on how to reduce waste and how to sustainably manage waste.

Education programs need to be guided by community needs, bin audit analysis and actual community behaviour so that appropriate support is provided. The community survey undertaken as part of the preparation of this plan indicated a high level of awareness of correct recycling requirements but a lower level of awareness of Council's programs for the recycling of batteries and compact fluorescents.

Residents respond better when they understand the reasons behind the waste system requirements, such as no plastic bags in green waste bins in order to avoid contamination of compost products.

The community waste education issues that are a focus of the new plan include:

- Supporting change to 80 litre bins – preparing community for change, facilitating acceptance.
- Targeting households with incorrect use of recycling bins.
- Targeting early adopters for innovation programs.
- Supporting rollout of additional green waste bins.
- Removal of organics from waste stream by home composting.
- Providing information on drop off services for batteries, fluorescent light bulbs, e-waste and other material to be diverted from landfill.
- Encouraging recycling and resource recovery.
- Reducing litter

Currently an annual recycling and compost program is prepared and implemented. This Plan recommends that an annual community integrated education plan be prepared and implemented.

The implementation of the Whitehorse Waste Management Plan 2011 will require increased ongoing emphasis on community engagement and education to ensure that Council's waste reduction measures are successful. Particular focus will be given to assisting Council, residents, businesses, schools, and the waste contractors to increase resource recovery and reduce waste to landfill. Waste education will include the development and delivery of the Waste Education Plan that covers a range of programs linked to the waste and recycling services, Whitehorse Recycling and Waste Centre, as well as additional programs such as the reduction of litter and dumped rubbish.

The implementation of new waste contracts, the proposed service changes and the changeover of garbage bins requires an intensive community engagement campaign because the changes will affect the whole community. The need to continue to reduce waste to landfill and deliver Council's waste and recycling services in a sustainable manner throughout the contract period requires ongoing community engagement and support

5 KEY WASTE ISSUES

The following key waste issues have been taken into consideration in the preparation of the Whitehorse Waste Management Plan 2011. These issues have influenced the scope, timing or priority of the proposed actions in the Plan. The issues do not represent all of the influencing factors for this Plan, and are presented here in brief summary only.

5.1 COMMUNITY NEEDS AND EXPECTATIONS

Council's waste and recycling services will be managed and progressively improved to meet community needs and expectations. The community needs and expects Council's waste services to be high quality, reliable, and compliant with relevant Federal and State Government standards, policy and legislation. The Whitehorse community supports Council's strategic objectives to reduce waste, increase diversion from landfill, and to provide more opportunities to recover and recycle waste items. There is a clear expectation that these objectives must be achieved in a sustainable and affordable manner.

The actions within the Whitehorse Waste Management Plan 2011 generally reflect the input from the community for the progressive improvement to waste services and facilities that the community currently support and utilise. The Plan includes actions to ensure that future changes to the waste and recycling services are reasonable and justified, and that any transition to new service arrangements involves clear communication with the community.

5.2 POTENTIAL CHANGES TO STATE GOVERNMENT WASTE POLICY AND PROGRAMS

At the time of drafting the Whitehorse Waste Management Plan 2011, the State Government is reviewing the roles and responsibilities of Sustainability Victoria and Metropolitan Waste Management Group (MWMG), and the Victorian Auditor General has recommended a review of the state's leading waste strategy, *Towards Zero Waste (TZW)*. The status of the Victorian Advanced Resource Recovery Initiative (VARRI) to stimulate the development of Advanced Resource Recovery Facilities in Melbourne is unknown.

The Whitehorse Waste Management Plan 2011 assumes that the intent and general direction of current Victorian waste policy will continue, but the implementation timetable will be slower than anticipated. The timeline for achieving the waste diversion targets for TZW is likely to be delayed by at least 5-years as a result of the delays in developing suitable advanced resource recovery facilities.

The Whitehorse Waste Management Plan 2011 proposes that Council adjust its waste diversion targets accordingly and includes actions to work with relevant state and metropolitan agencies in the promotion and delivery of waste and recycling programs that will benefit the Whitehorse community. These actions can be adapted if the state or metropolitan programs change, but the Plan assumes that the current state-wide programs such as Detox Your Home, (or similar) and the various metropolitan waste reduction campaigns will continue as a minimum.

5.3 UNCERTAINTY ABOUT THE FUTURE OF THE ORGANICS PROCESSING INDUSTRY

The number of processing facilities available for composting municipal garden organics and bundled prunings has substantially reduced in the past 2 years. The 3 facilities that Whitehorse used to

process garden organics all closed due to odour issues and rising compliance costs. Across Melbourne, the supply of material from municipal collections exceeds the capacity of the remaining processing facilities. Interim arrangements are in place to mulch and reuse the organic material to rehabilitate quarry and old landfill sites, with some material going to trial use on farms. This may not be sustainable over the long term.

The MWMG is currently developing tenders for the construction and operation of modern processing facilities that will employ technologies such as enclosed vessels. It is intended that these processing facilities will be able to operate without the odour concerns that have forced the closure of a number of organics processing facilities across Melbourne.

Councils in the north and west of Melbourne recently accepted a collective tender with Veolia to develop an in-vessel composting facility to service the needs of the region. This involves the participating Council's committing to send their garden organics exclusively to this facility as part of a long-term contract arrangement, making it viable for a private contractor to invest in the development of a suitable processing facility. The gate fee is expected to be at least 50% above previous garden processing prices to cover the cost of establishing such a high-technology facility. The benefit is that in time, such a facility may be able to process food waste as well as garden organics. The facility is yet to get planning approval and start-up is not expected until 2013 at the earliest.

Councils in the south-eastern suburbs of Melbourne are scoping a similar tender and collective contract arrangement. The Whitehorse Waste Management Plan 2011 proposes that Whitehorse Council considers joining in the tender process with the south-east Councils if such a facility would resolve the long-term viability concerns about processing garden organics, and provide for the possibility of processing food waste. The increased capital and operational costs for these new processing facilities means that gate fees will be significantly higher than present costs. The cost/benefit of Whitehorse participating in this collective contract arrangement is yet to be assessed.

The tender to establish a composting facility to service the south-eastern Councils is expected to be advertised and awarded in 2011/2012. The successful tenderer would then be responsible to obtain planning approval and construct a new composting facility. Such a facility is not expected to be available until 2014/15 at the earliest, due to the difficulties and long lead times associated with establishing such a substantial new waste facility.

As the current garden organics service is constrained by a lack of processing capacity for collected material, the Whitehorse Waste Management Plan 2011 proposes that changes to the current optional service should not be considered until a new processing facility has been constructed and has been in operation for a sustained period. The Plan further proposes that prior to the expiry of its current garden organics processing contract in June 2012, that Council seek a new contract for interim garden organics processing arrangements in parallel with the MWMG interim organics diversion arrangements.

5.4 LANDFILL LEVY AND ADVANCED RESOURCE RECOVERY AND TREATMENT (ARRT)

The landfill levy is a tax levied by the Victorian State Government on every tonne of waste deposited at landfills. Landfill levies increased from $9 per tonne for municipal waste in 2009/2010 to $30 per tonne on 1 July 2010, and to $44 per tonne from 1 July 2011. These increases were due to government policy to act as an incentive to reduce waste disposal to landfill and to provide additional and ongoing funding to support efforts by government, industry and the community to reduce waste.

The increase in the landfill levy between 2009/2010 and 2011/2012 added $35 per tonne to the cost of disposing of the 82,380 tonnes of municipal waste each year, imposing an annual cost increase of $2.88M on Council services. This is equivalent to a 2.73% increase in Council rates over a two-year period.

The landfill levy will continue to increase by 10% each year until 2014/2015. This will continue to have a significant cost impact on Council's waste and recycling services and rates. As the increasing amount of landfill levy drives up the cost of landfill, it is expected that the gap between the gate fees required to sustain Advanced Resource Recovery and Treatment (ARRT) facilities and the gate fee to dispose of waste to landfill will progressively reduce. The gate fee for ARRT facilities where they are more established in NSW ranges from $150 to $200 per tonne, more than double the current cost of disposing of waste to landfill in Victoria.

The role of the landfill levy in providing an incentive for the development of these ARRT facilities is not known at this time. The business case for the development of ARRT facilities is to be set out in as yet unreleased VARRI document.

5.5 IMPACT OF PROPOSED NATIONAL CARBON PRICE MECHANISM AND CARBON TRADING SCHEME

At the time of drafting the Whitehorse Waste Management Plan 2011, details of the Australian Government's carbon price scheme are still being finalised. The cost that this will add to Council services is yet to be determined and may depend in a large extent on how landfill gas emissions are to be measured and treated under the scheme. Whitehorse Council is part-owner of a landfill that captures methane gas that is converted to energy, but there are still some emissions that may require offsetting or the purchase of carbon credits. Council uses other landfills that will similarly be affected by a carbon price scheme, so the cost of landfill could rise significantly.

Council's waste and recycling operations will be impacted by any cost increase in fuel for transport vehicles and rising utility costs. In a positive sense, the carbon price is expected to provide incentives for the development of renewable energy and programs to reduce Council and the community's environmental footprint. The Whitehorse Waste Management Plan 2011 includes an action to assess the impact of the carbon price on Council services once the details of the carbon price scheme are known and the legislation has passed.

5.6 LANDFILLS AND EPA COMPLIANCE

In late 2010, the EPA introduced the Best Practice Environmental Management - Siting, Design, Operation and Rehabilitation of Landfills (Landfill BPEM). The landfill BEPM raised the expected standards for managing landfills to incorporate new technology and the latest understanding of improved management practices at landfills. The revisions to the document also respond to a number of the recommendations of the Victorian Ombudsman's report Brookland Greens Estate — Investigation into Methane Gas. Every landfill is required to improve its landfill management practices to meet these new standards, especially the management of methane gas, leachate, and the reduction of landfill odour.

Compliance with these new standards is adding considerably to the operating costs of modern landfills. It is also increasing the cost of rehabilitating closed landfills and capping completed areas of existing landfills.

The EPA is currently undertaking stricter enforcement actions on landfills and waste processing facilities to ensure compliance with the new BEPM. The Clayton South Regional Landfill that is part-owned by Whitehorse is progressively updating its infrastructure and operating systems in response to stricter enforcement action by the EPA, as are some of the landfills that Council uses to dispose of its municipal waste.

The Whitehorse Waste Management Plan 2011 proposes that Council continues its active participation in the Clayton South User Group in managing the operations and development of the

Clayton South Regional Landfill to ensure compliance with EPA licence conditions. It further recommends that the Clayton South User Group, develop a business plan to consider options for the future use of the Clayton South Regional Landfill that will maximise the benefit to Whitehorse waste and recycling services.

5.7 WASTE CHARGING OPTIONS

As part of the development of the Whitehorse Waste Management Plan 2011, a review was undertaken of waste charging options and the value of introducing a waste services charge for all of Council's kerbside waste and recycling services that is separate from Council's general rates.

The cost of providing Council's waste and recycling services must be covered by the general rates, waste charges, or a combination of rates and charges. The cost of Council's main kerbside waste and recycling services is currently included in the general rate with a separate charge levied for optional extra services such as garden organics bin collections or the provision of a second or larger garbage bin.

An underlying principle of charging a property-based general rate is that all property owners should pay a fair share of rates regardless of their choice to use or not use Council services, programs and infrastructure; on the basis that over time, people will use a wide range of Council services and facilities.

The user-pays charging mechanism, to help reduce municipal waste to landfill, is a widespread and accepted practice. Typically a household or business using larger bins or more services would pay a higher waste services charge than a household or business using smaller bins or fewer services. For example, a property using a 240 litre garbage bin would have a higher charge than a property using a 120 litre garbage bin, which in turn would have a higher charge than a household or business using an 80 litre garbage bin.

There are two main options for showing the cost of providing waste services to the community. Of the metropolitan Melbourne Councils, 50% have a separate waste services charge that covers the cost of providing all of their waste services, which is shown as a separate charge to the general rates. The other 50% of Councils include the cost of their core waste services in the general rate and separately show any waste charges for optional or extra waste services (like Whitehorse).

The introduction of a separate waste charge for a basic service could be considered to be regressive in that it will take a higher percentage of income from lower income households. Unlike the current system where every rate-paying property contributes to the cost of the waste and recycling services, a user-pays waste services charge means that properties that do not use the Council waste services will not contribute towards the cost of providing these services. A separate waste services charge would therefore have fewer properties paying for the cost of the services.

It is estimated that there are over 4,000 businesses and multi-unit developments that do not use Council's kerbside waste and recycling collections because of their diverse and usually high-volume service needs. Council's waste and recycling services are available for use by all rate-paying properties, but in many cases, the services are not able to meet their needs. These properties typically require larger bin capacity and more frequent collections.

In recent years, the escalating cost of the State Government landfill levy has significantly added to the cost of providing municipal waste services. Councils have taken varied approaches to showing the community the impact of the rising landfill levy. Most Councils have separately calculated the percentage increase or amount of rates and charges necessary to pay the landfill levy to the State Government, but there is not yet a consistent approach to how this charge is shown on the rates. Whitehorse Council currently includes the cost of paying the landfill levy in the general rates for the

various waste collection services and in the gate fee for disposing of waste at the Whitehorse Recycling and Waste Centre.

The Whitehorse Waste Management Plan 2011 recommends introducing a separate charge for the landfill levy, similar to the separate charges for using larger garbage bins or the optional garden waste service. This would help identify clearly that the landfill levy is being collected for the State Government.

One of the important challenges in determining waste charges is to do so in a manner that covers the full cost of providing the services and encourages behaviour change to reduce waste to landfill, yet remains affordable for the diverse sections of the Whitehorse community.

The Whitehorse Waste Management Plan 2011 proposes the introduction of a waste service charge for the 120 litre garbage bin in 2013/2014, which would apply when the 80 litre garbage bin is introduced as the standard size garbage bin for Whitehorse in 2013/2014. The charge for using a 240 litre bin will continue. These charges are consistent with user-pays principles in that the larger the garbage bin capacity and therefore the more waste that goes to landfill, the higher the charge.

Whitehorse residents will receive the following waste and recycling collection services as part of the general rates:

- Weekly collection of domestic garbage in a 80 litre garbage bin
- Fortnightly collection of recyclables in either a 120 litre, 240 litre or 360 litre recycling bin;
- Two hard waste and bundled pruning collections at-call.

Optional or extra services will be available subject to the payment of a waste service charge that varies depending upon the required service or bin capacity. Waste charges will apply for:

- Weekly collection of domestic garbage in 120 litre garbage bin or 240 litre garbage bin;
- Fortnightly collection of garden organics bin in either a 140 litre or 240 litre garden bin;
- Additional hard waste and bundled pruning collections at-call, in excess of 2 per year.

The waste service charges will be determined each year in Council's annual budget process. The garbage bin service charge is expected to increase in line with the increasing landfill levy and landfill operational costs, and to preserve the price differential to act as an incentive to reduce garbage by using a smaller bin.

5.8 NEW KERBSIDE WASTE AND RECYCLING CONTRACTS

As discussed in section 4.2 of this Plan, Council's new kerbside waste and recycling collections will be based on long-term 7 year contracts to ensure that the services use quality collection vehicles and capital costs are spread over the contract period (amortised). While it is possible to vary kerbside contracts during the contract period to take into consideration new legislation or collection practices, substantial changes to technology or infrastructure such as bins or trucks would involve major changes to the contract, with consequent cost implications.

Council has successfully changed its kerbside service arrangements mid-contract in the past. The recycling collection service changed from a crate and bundled paper collection that required manual lifting of recyclables to a wheelie bin-based service in 2005. This required extensive contract negotiations, approval of the Local Government Minister, and an extension to the contract to justify making the change mid-contract.

It is likely that the development of advanced waste processing technologies and facilities will impact the kerbside collection contracts before the expiry of the 7-year term. However the proposed basis of the kerbside contracts is that they will meet Whitehorse needs for the foreseeable future and will allow for a sensible transition to utilising these facilities once they are established and their viability is

proven. The new contracts will have sufficient flexibility built in to allow for reasonable change and improvement as required.

The Waste Management Plan 2011 proposes that prior to the expiry of these new kerbside contracts, that options to recover and recycle food waste and more garden organics be considered as a priority to achieve improved diversion of waste from landfill.

5.9 WHITEHORSE RECYCLING AND WASTE CENTRE

As discussed in section 4.5 of this Plan, the Whitehorse Recycling and Waste Centre (WRWC) serves as the main waste drop-off point for domestic and commercial customers in Whitehorse and the surrounding region. It is therefore a very important Council-owned and operated facility with a significant role to play in the future management of waste in Whitehorse.

The WRWC needs to be managed in the context of its structure that is built on top of on old landfill site and the constraints of its size and layout. A modern resource recovery facility (transfer centre) would be configured to provide many different recycling bins en-route to the final residual waste pit, to maximise the recovery of recyclable materials. The site constraints and the proximity to nearby commercial and residential properties prevent the WRWC from being redeveloped in any major way to expand its recycling and recovery arrangements.

Within the constraints of the site, there are still opportunities to improve the recovery and recycling of waste materials, and to serve as a waste regional transfer hub. Under current kerbside garbage collection arrangements, the collection vehicles transport most of the garbage directly to landfill rather than use the WRWC. This arrangement proved to be cost-effective at the time of the last tenders. The option to use the WRWC as a transfer hub for Council's domestic garbage will be considered as part of the tender evaluation for the new kerbside contracts.

The Waste Management Plan 2011 proposes that the strategic local and regional role of the WRWC be maintained, including seeking opportunities to partner with programs that will increase the recovery of materials that would otherwise go to landfill.

6 IMPROVEMENT OPPORTUNITIES

There have been a number of opportunities for improvement identified during the preparation of the Whitehorse Waste Management Plan 2011. Potential improvements to the recovery and recycling of resources using advanced waste treatment facilities have been discussed in Section 5 and previously in this Plan. Significant improvement in the proportion of waste diverted from landfill will depend on the availability and affordability of advanced waste technology processing facilities. Advanced technology facilities are not expected to be available for another 3 to 5 years. In the interim, the key areas for improvement of Council's waste and recycling services and facilities are:

- Improvements to the kerbside collection services, particularly the hard waste collection;
- Changes to the kerbside garbage and recycling bins to encourage improved diversion of waste from landfill;
- Incentives and programs to reduce the amount of food and garden organic material that is currently going to landfill;
- Opportunities to progressively increase the recovery of recyclable materials from the waste being dropped off at the Whitehorse Recycling and Waste Centre;
- Opportunity to provide a drop-off facility for the recycling of TV's and computers;
- Community awareness about Council's waste services and waste reduction practices.

6.1 HARD WASTE COLLECTION IMPROVEMENTS

As part of the development of the Whitehorse Waste Management Plan 2011, a review was undertaken of the current area-based hard waste collection and consideration given to changing this service to an at-call or 'ring and book system. There are a number of occupational health and safety risks as well as significant amenity issues such as unsightly streets, scavenging and dumped rubbish associated with the hard waste collection. The risk and problem issues tend to be more prevalent in an area-based hard waste collection because of the scale and predictability of street-by-street collections.

A summary of the key features of the different types of hard waste collections is as follows:

Area-based Hard Waste Collection	**At-Call or 'Ring and Book' Hard Waste Collection**
Fixed schedule collection street by street, municipality divided into 9 areas, each area taking 1 week to complete collections.	Flexible schedule – residents ring and book a collection when they need it, bookings are grouped into similar geographical zones.
Residents are notified by brochure in letterbox in advance of each collection.	Availability of service is promoted in usual Whitehorse media and residents need to ring to book a collection.
Collections 6-months apart, Summer and Winter.	Collections can occur year-round, when needed.
Large quantities of waste are placed out along every street as participation rates tend to be high, with each area having waste out for about 3-weeks at a time.	Piles of waste are not as evident as participation is lower and collections are spread throughout the year, but some streets may have waste out multiple times per year. Some collections may be possible from inside the property, thereby reducing visual amenity issues.
Resource recovery - materials are collected by different trucks to ensure recycling of the components that are commercially viable for recycling – scrap metal, prunings, mattresses.	Resource recovery - collected materials can be separated after collection for later transfer to recyclers; if booked volumes are sufficient, separate collection trucks can be used.

Area-based Hard Waste Collection	At-Call or 'Ring and Book' Hard Waste Collection
Scavenging is common as the timing and location is well known in advance, and the volume of waste is higher and therefore more likely to have items of interest. Resulting impact on amenity - scavenging happens at all hours, days on end; and safety – piles of waste are often scattered by scavengers onto footpath, road or driveway – can be significant.	Scavenging is less common as the locations are not advertised, timing of collections is spread out, and volumes at any one time are smaller.
Rubbish dumping is increasing – hard waste dumped in the area to be collected in the hope that contractor will collect. Can cause OHS issues if materials are hazardous and not eligible for collection (eg gas bottles, chemicals), and adds to cost of collection.	Rubbish dumping is less prevalent because the location of collections is usually only known by those that book the service. This reduces the demand on Council services.
Waste to landfill – the overall volume of waste to landfill is relatively high (between 3,500 to 4,000 tonnes per annum) even after the scavenging or 'community recycling' has reduced the initial volume of waste placed out for collection.	Waste to landfill is typically lower because fewer households participate over the course of the year
Costs – cost to complete an entire collection for every street in Whitehorse is significant, but because of economies of scale, cost per household serviced is reasonable.	Costs - Due to the need to program flexibly and cover wider are per collection, the unit cost per household is higher than area-based collection but due to lower participation levels, overall cost is comparable for expected Whitehorse participation levels.

These two types of hard waste collections each have their advantages and disadvantages. Approximately half of the metropolitan Councils across Melbourne operate area-based hard waste collections, and half operate 'at-call' collections. The community survey conducted during the consultation phase of the development of the Waste Management Plan 2011 revealed strong support for the current area-based service. Some of this support was related to resident concerns that a change to the hard waste service would result in additional costs. Comments received from residents during the performance of the hard waste collections support the need for more flexible collections at other times of the year, at a time to better suit particular resident needs.

The Waste Management Plan 2011 proposes changing the collection arrangements for the hard waste service to an at-call or 'ring and book' service from July 2012. Residents would still be entitled to two collections per year at no added cost, but could arrange additional collections for a charge. The benefits and improvements expected from this type of service include:

- Flexibility – the collections would be delivered at the timing to suit the resident;
- Less scavenging;
- Less dumped rubbish;
- Less adverse impact on the amenity of the neighbourhood;
- The option to collect the goods from within the resident's property in special cases if needed, such as for residents with restricted mobility;
- It can accommodate waste from tenants departing rental properties because tenants can ring and book as required rather than only suiting those tenants that depart during the fixed twice-yearly schedule.

The at-call collections will be carefully managed to ensure that the service is cost-effective by competitively tendering the service to obtain the most favourable collection price. The service will have requirements to ensure that material is not placed out on the streets for long periods of time and only booked material is eligible for collection. The contract arrangements will specify that resource recovery of commercially viable materials continues, and that the collection contractors seek further opportunities to reduce the volume of hard waste that goes to landfill.

6.2 COMMINGLED RECYCLABLE IMPROVEMENTS

The current Whitehorse commingled recyclable material collections provide a best practice level of service. Material collected includes plastics from 1 to 7, metals, glass containers, paper, cardboard and composite paper packaging.

Waste audit data indicated that there is between 8% and 13.5% of recyclable materials in residual waste bins. The amount of recyclable material in waste bins was higher in the recycling week indicating that recyclable material is being deposited in waste bins when the recycling bin is full.

Feedback from the consultation program indicated that some residents found that the current 240 litre bin was inadequate for the amount of recyclables that they generate each fortnight.

Options to provide a larger volume of recyclable collections include:

- Weekly collections
- Provide additional 240 litre bin to residents (current system)
- Provide option for larger comingled bin

The survey indicated that 95% of residents did not want a weekly commingled recyclable collection service. The current system allows for an additional 240 litre recycling bin free of charge. Very few residents take up this option possibly due to lack of knowledge of the option and the intermittent need for extra capacity would not be offset by the inconvenience of having an extra bin to store.

A recent innovation for waste collection is the introduction of a 360 litre mobile garbage bin (pictured below). This bin can be picked up be the same collection vehicle as a 240 litre bin and it is available in the colour of the current recycling bin. The introduction of this bin as an option to residents would provide 50% more capacity without the inconvenience of having to provide two bins or increased collection frequency.

Figure 4 - 360 Litre MGB

The appropriate time to introduce this bin would be at the introduction of the new collection contract. Collection contractors may seek a higher lift rate for a 360 litre bin compared to a 240 litre bin as it may reduce the number of properties that could be serviced in a given run. Inclusion of this option at the time of tendering for the new services will result in the most competitive price.

The value of the collected recyclable materials varies over time, depending upon commodity prices and fluctuations in the demand for items made from the recycled materials. The value of kerbside recyclables has stabilised and increased in recent years as a result of improvements to processing technology that has resulted in a better quality of recycled product. Council can therefore expect that there will be a significant reduction in processing costs under the next recycling contract in 2012. Recent tenders at other Councils have resulted in the Councils receiving payment for their recyclables, rather than having to pay per tonne to process them as is the case now for Whitehorse. Savings in processing costs are expected to offset any additional costs as a result of introducing the 360 litre recycling bin option.

6.3 RESIDUAL WASTE REDUCTION

The domestic garbage service currently uses a 120 litre bin as the standard size bin that residents or businesses are entitled to as part of the general Council rate. Households or businesses that require more garbage capacity can obtain a second 120 litre bin (or use a 240 litre garbage bin) for payment of an additional fee. Currently there are 1,700 households that have a second or larger garbage bin. This is an element of user-pays within Council's current waste arrangements.

There is a clear correlation between bin size and waste disposed to landfill. Sustainability Victoria data indicates that on average, households with a 120 litre bin dispose of 60 kg per annum more to landfill than households with an 80 litre bin. Whitehorse residents and small businesses currently dispose of an average 477kg per tenement per year.

Whitehorse has 65,500 domestic garbage bins in use. If every garbage bin was changed to an 80 litre bin, at the average reduction of 60 kg per annum there would be 3,930 tonnes less waste sent to landfill. At a landfill levy fee of $48.4 per tonne in 2012/2013, this would potentially save $198,200 per annum by avoiding waste levy fees. If the total gate fee of $87 per tonne is avoided, the savings could be even more significant, of the order of $360,000 per annum. However the extra waste is not going to vanish and not everyone would cope with an 80 litre garbage bin, particularly large families, families with young children, or businesses. The tonnage reductions and total dollar savings are therefore likely to be overestimated as residents who dispose of higher quantities of waste would probably continue to use the 120 litre bin.

The more likely result of reducing the standard garbage bin size to 80 litre capacity, but retaining the option to use the existing 120 litre bin for the payment of a higher waste charge would be:

- some residents and small businesses will be able to use the 80 litre bin because they already dispose of 80 litres or less of waste per week (ie. minimal or no reduction in tonnes disposed to landfill);
- some residents would change their waste disposal practices if the financial incentive to reduce bin size was sufficient to change behaviour (ie. reduced waste to landfill);
- other residents or businesses would need to retain the 120 litre garbage bin due to their waste disposal needs (ie. minimal or no waste reduction to landfill)

The percentage of Whitehorse residents and businesses that will use an 80 litre garbage bin and reduce waste to landfill is not known. Experience at Councils that have adopted the smaller 80 litre bin as the standard or preferred size for their garbage collections is that if the 80 litre bin is the standard size bin for the majority of residents, then the average disposal of waste to landfill per bin is lower, and the overall waste to landfill reduces.

The Whitehorse Waste Management Plan 2011 contains an action to change to a smaller sized 80 litre garbage bin over to achieve a reduction in the amount of residual waste that goes to landfill.

The cost to supply and deliver a new 80 litre bin for 65,500 garbage services would be in the range of $3,500,000 to $4,000,000. It is not expected that every household and business in Whitehorse would wish to change to an 80 litre garbage bin, so the cost of changing to a smaller bin will be lower. The number of bins to be changed over will be determined by a community survey. The cost of changing over to the 80 litre garbage bins will be spread over the 7-year period of the new garbage contract, effectively amortising the capital cost of purchasing the 80 litre bins over time. Funding grants will be sought to assist with the changeover process.

The existing bin stock in Whitehorse is an artefact of the history of amalgamation and transition from the older collection systems. There are still some 240 litre bins in use and the 240 litre bins in use are aged from approximately 8 to 12 years. Many of the 120 litre bins are also aged from 8 to 12 years. Mobile garbage bins (wheelie bins) have a finite life and as the plastic ages, breakage increases. Bins with a higher percentage of recycled resins have a shorter life expectancy. The life expectancy of a new resin bin is expected to be 10 to 15 years. If a bin is stored under cover it would have a greater than 15 year life expectancy.

Strong support was given during the community consultation for Council to provide financial incentives to reduce waste to landfill. Providing a smaller bin as a standard service, but with a larger bin for a reasonable annual service fee is consistent with the feedback obtained during community consultation. Residents were sensitive to cost pressures and concerned at equity issues of not wishing to unduly penalise larger families or new parents who typically have larger volumes of waste for disposal, so any difference in waste charge should be set at an affordable level.

6.4 FOOD AND GARDEN ORGANICS

The 2010 Whitehorse waste and recycling bin audit revealed that the average Whitehorse garbage bin (residual waste) consisted of over 40% food waste and up to15% of garden organics. Achieving the 65% waste diversion target will require diversion of food and garden waste from the residual waste stream. The State Government Strategy is to reduce waste to landfill by the introduction of Advanced Resource Recovery Technologies such as anaerobic digestion, enclosed vessel composting and energy from waste, that effectively extract food and garden organic waste from the residual waste stream. The City of Whitehorse supports the introduction of these initiatives however the timing and costs to introduce these schemes is not certain.

The introduction of food into the current garden organics stream is not recommended at this time due to a lack of processing facilities. If suitable processing facilities are introduced in the next 5-years, then food into gardens organics may be considered once these facilities prove to be viable and affordable. In addition to the availability of suitable processing facilities, issues such as collection frequency, management of contamination, cost/benefit, opt in/opt out and education programs would need to be addressed.

The separate collection of food would similarly require considerable capital costs to establish new bin and collection vehicle truck infrastructure, so it is considered to be a less viable option at this time.

Any consideration of collecting food waste should be evaluated with support from MWMG and the State Government as the primary requirement is the availability of suitable facilities to process the waste in a sustainable and affordable manner.

In the interim, there are schemes that can be introduced at a local level that will reduce food waste to landfill. Home composting provides the greatest opportunities to reduce waste to landfill. The City of Whitehorse has a rebate scheme that provides $30 to offset the cost of compost bin or worm farm

purchases over $100 in total. Anecdotal information obtained during consultation programs indicated the uptake of home composting is limited by the issues often encountered by home worm farmers or composters such as:

- Vermin such as rats and mice
- Flies
- Odour
- Excessive worm mortality

These problems are all solvable but require a level of effort beyond the time available to many residents. More advanced composting systems such as Aerobins or tumbler systems offer simpler operational procedures but they are more expensive to purchase. These systems also offer the advantage that they can be operated on concrete or unsealed surfaces making them potentially suitable for multi unit dwellings.

It is proposed that a trial be undertaken in conjunction with MWMG and Sustainability Victoria to support a rollout of Aerobin or similar system by sample households in a selected location. These households will then be benchmarked against comparable households to determine if the new compost system alters the volume of food waste in the residual garbage bin and the total volume of waste in the residual garbage bin. The trial would also evaluate resident feedback on the ease of use of the more advanced composting systems and the behaviour change achieved (if any).

A project with similar aims as the Aerobin trial is the City of Frankston "Halve Garbage Waste" that was a project that aimed to reduce waste-to-landfill by composting or worm- farming. Funded through Sustainability Victoria, the Half Garbage Waste project involved 1000 households from across Frankston City. These households were given a free compost bin or subsidised worm farm and received a $20 rebate on their Annual Rates, subject to changing from a weekly to fortnightly household garbage collection. Their garbage bins were identified by a red lid to ensure compliance with a fortnightly collection schedule.

The project was capped at 1000 participants. The majority of households participating are single occupants or couples. The City of Frankston provided the following comments:

- Households needed the weekly bin pick up at peak times.
- Data indicated that on average, the waste in garbage bins was halved.

The cost of Aerobins is between $280 to $370 depending on the number of bins purchased. The cost of a rollout of an Aerobin trial would therefore need to be carefully managed as there would be additional costs associated with delivering the bins, explaining their use and the purpose of the trial, monitoring the trial, collecting the bins and auditing the waste disposal, and then analysing results and benchmarking with other households. It is worthwhile considering a trial for Whitehorse, building on the learnings of the Frankston trial, but the support of sponsors or external funding may be necessary to ensure the trial is cost-effective.

The Whitehorse Waste Management Plan proposes that incentives and information programs to encourage home composting and worm farming to process food and garden organics continue every year.

6.5 WHITEHORSE RECYCLING AND WASTE CENTRE IMPROVEMENTS

In 2010/2011, the Whitehorse Recycling and Waste Centre received 85,782 tonnes of materials and successfully recycled 14,895 tonnes of green waste, 919 tonnes of paper & cardboard, 7,923 tonnes of scrap metal, 20,415 tonnes of clean concrete, 21,509 litre of engine oil and 4,532 mattresses. A total of 44,850 tonnes of material was diverted from landfill resulting in an excellent diversion rate of 52.3%.

As discussed in section 4.5 of this Plan, the Whitehorse Recycling and Waste Centre site is constrained in size and layout that limits further opportunities to establish storage bins and recycling arrangements for other types of materials. The proximity to nearby commercial and residential properties as well as constraints imposed by the EPA licence means that the Centre has limited options to process recyclable materials and cannot store materials for long periods or near the boundaries of the site.

Despite the constraints on the Centre, Council is continuing to streamline the current recycling practices and consider possible resource recovery opportunities.

Council is monitoring the implementation of the National Television and Computer Product Stewardship Scheme and will consider whether the Whitehorse Recycling and Waste Centre can be included as one of the sites used to rollout the product stewardship scheme. Council will continue to seek Victorian Government support and funding to establish a permanent Detox facility at the Whitehorse Recycling and waste Centre for the less toxic chemicals such as paint.

Other options that could be considered are the recycling of used cooking oil from commercial premises and the recycling of polystyrene, subject to space and finding reliable recycling processors.

Council will continue to improve the resource recovery and recycling opportunities at the Whitehorse Recycling and Waste Centre, to increase the diversion rate from landfill. Council will seek funding through the Victorian Government landfill levy funds for resources, programs and infrastructure to increase resource recovery and waste education at the Whitehorse Recycling and Waste Centre.

During the community consultation process, there was support for a resales facility for re-usable furniture and other household items to be established at the Centre. A resales facility would encourage the separation of incoming usable hard waste items to a storage shed, where items could be graded or even repaired and later sold. Unfortunately the area of the Whitehorse Recycling and Waste Centre site is insufficient for a resales centre. A resales centre requires customer parking, storage, sales area, staff amenities etc. The Mornington Transfer Centre has a small resales facility that occupies an area of approximately 6,000m^2. Such an area cannot be accommodated at Whitehorse.

6.6 OTHER IMPROVEMENTS

During the community consultation process, residents supported programs such as the Renew collection of unwanted but useable household goods and commented that more effort should be made to recover usable goods from the hard waste collection.

Comment on the Renew collection is included in section 4.7.5 of this Plan, including a recommendation that future Renew collections be reviewed after the experience of operating the collection using different methodologies over the past 2 years. While the renew collections are reasonably popular and are supported by residents, they are resource-intensive to deliver for relatively small quantities of materials. The learnings from the Renew collections to date will be used to streamline the Renew collection in 2012.

There are other programs and campaigns for the recovery, re-use and recycling of unwanted household goods. The Whitehorse Waste Management Plan 2011 recommends that Council considers participating in suitable programs that complement the existing range of Council services, such as the Garage Sale Trail scheme where garage sales are coordinated across the municipality on a particular date as part of a National program, and widely promoted to encourage re-use and recycling. The Plan encourages Council to consider other suitable partnering opportunities that may arise with charities, not-for-profit organisations, and the recycling industry to improve the recovery and recycling of household goods from the waste stream.

7 RECOMMENDATIONS

The Whitehorse Waste Management Plan 2011 contains the following key recommendations:

1. Amend Council's municipal waste recovery and diversion target to 55% by 2016.
2. Prepare new kerbside waste and recycling collection contracts to commence in July 2012. New contracts are to be based on best practice performance and customer service standards, be cost-effective, and sustainable.
3. Reduce the standard garbage bin size to 80 litre from July 2013 to encourage further waste reduction, including implementing an exchange program for existing 120 litre garbage bins in May/June 2013.
4. Apply waste service charges for the use of 120 litre garbage bin in 2013/2014, as well as continuing a charge for the use of a 240 litre garbage bin, to act as a financial incentive to reduce waste to landfill.
5. Consider the implementation of a separate service charge to reflect the landfill levy collected for the State Government, as part of the 2012/2013 budget process.
6. Introduce a 360 litre commingled recycling bin option with the new recycling service contract in 2012/2013.
7. Change the area-based hard waste collection system to an at-call (ring and book') system, including improved recovery and recycling of hard waste items, with residents entitled to 2 collections per annum at the timing of their choice at no additional charge, with an opportunity for further collections in excess of 2 per annum at an additional user-pays charge.
8. Trial advanced home composting systems to determine the viability of such systems to reduce the volume of food and garden waste in the domestic garbage bin, commencing in 2012/2013.
9. Continue to promote home composting by providing incentives for home composting, worm farms, bokashi bins and like products; and provide information on 'how to' compost and reduce food and garden waste.
10. Continue the user-pays garden organics collection service on an optional basis until such time as a viable and sustainable organics processing facility is established that is capable of processing the Whitehorse garden organics material.
11. Continue the current range of resource recovery and recycling arrangements at the Whitehorse Recycling and Waste Centre, and continue to look for opportunities to expand the range of material diverted from the general waste pit where practicable and viable.
12. Evaluate the viability of establishing a drop-off facility at the Whitehorse Recycling and Waste Centre for TV's and computers as part of the proposed National Product Stewardship program scheduled for implementation in 2012.
13. Develop a Waste and Recycling Education Plan that includes as a minimum:
    a. an annual program of community awareness and education about the correct use of Council waste and recycling services
    b. seminars around home composting and food recycling
    c. Increase marketing and promotion to the community so there is an increased awareness of Council's waste and recycling services
    d. Waste avoidance and waste minimisation hints and tips
    e. Campaigns to reducing littering and dumped rubbish
    f. Reducing contamination in the various bin services

14. Consider participating in a south-eastern regional contract for a new regional composting facility to be established in south-eastern region within the next 5 years (by 2015/2016).
15. Prior to the expiry of the next kerbside waste collection contracts in 2019, evaluate options for the most effective and affordable collection and processing of food waste to divert food from going to landfill.
16. Advocate to Federal and State Governments to support programs, services and infrastructure that will increase resource recovery and reduce waste to landfill, particularly product stewardship programs where industry is more responsible for the recovery of packaging and end-of-life products.
17. Seek funding from the Victorian Government landfill levy funds for resources, programs and infrastructure to increase resource recovery and waste education at the Whitehorse Recycling and Waste Centre, and to introduce best-practice kerbside bin collections using 80 litre garbage bins and 360 litre recycling bins.

Other actions included in the Whitehorse Waste Management Plan 2011 are as follows:

- Expanding education and behavioural change programs in support of appropriate use of Council services, improving the recovery of recyclable resources, and reducing waste;
- Waste reduction programs that target the reduction of the volume of food, garden and re-usable hard waste items that currently go to landfill;
- Supporting programs that recover and recycle scrap metal, whitegoods and electronic waste items such as TV's, computers and mobile phones;
- Continuing to provide and promote services at selected Council facilities for the drop-off, collection and recycling of light globes and household batteries;
- Continuing the Renew collections and/or drop-off days in 2011/12;
- Working with other Councils and the Metropolitan Waste Management Group on projects and programs that would benefit Council's waste and recycling services;
- Advocating for greater industry involvement and responsibility through product stewardship and resource recovery programs

All recommended actions are detailed in Section 8 Future Directions, table 8.3 Action Plan

8 FUTURE DIRECTIONS

8.1 OBJECTIVES AND PRIORITIES

The current kerbside landfill diversion rate at Whitehorse is 47%. The target for waste diversion from landfill is 65%. As discussed in this plan, achieving this target will require the introduction of advanced resource recovery technologies and improvement to the viability of markets for recycled food and green waste. This plan, while supporting the introduction of these technologies, seeks to deliver improvements in sustainable waste management over the next five years when it is unlikely that there will be sufficient advanced resource recovery technologies available to achieve the 65% target. Accordingly it is recommended that an interim five year target for the 55% diversion of kerbside municipal waste by 2016 be adopted. This interim target requires continuous improvement in Council's recycling and garden waste recovery, a reduction in the generation of waste, trial programs to divert food from landfill and increased recovery/recycling of other waste streams that currently go to landfill.

8.2 KEY PERFORMANCE INDICATORS

The following key performance indicators have been developed and are to be used to enable easy assessment of Whitehorse's current waste management performance. They also enable comparison with other Councils in the metropolitan region.

KPIs	Tonnes	Number of Households	tonnes/ Hh / year	Target
Tonnes to landfill	31,261	65,500	0.477	0.400
Tonnes of Commingled recycling	19,281	60,500	0.320	0.350
Tonnes of green organics processing	8,129	60,500 (24,400 average participation in 2010/2011)	0.134	0.200
Total waste generation	58,210			
			Rate (%)	Target % (if applicable)
Diversion rate – recycling			33%	37%
Diversion rate – organics			14%	18%
Diversion rate – total (recycling plus organics)			47%	55%

Table 6 - Key Performance Indicators – 2011 - 2016

8.3 ACTION PLAN

The following Action Plan has been developed to achieve identified long term objectives, detailed above, and address identified issues and opportunities for improvement detailed throughout the WMS:

FUTURE DIRECTIONS		ACTIONS	RESPONSIBILITY	COMPLETION DATE
Reduction strategies	• Reduce household and Council waste generation rate • Run programs that target efficient use of food in the home and minimise waste by reducing spoilage. • Targeted Community Education and incentive Programs that address reducing the volume of food, garden and hard waste that goes to landfill	1. Reduce the standard garbage bin size to 80 litre, combined with financial incentives for the use of smaller bins, to encourage waste reduction. 2. Implement a change-over program for existing 120 litre garbage bins to 80 litre garbage bins 3. Apply a waste services charge for the use of 120 litre garbage bin, and continue with a waste services charge for a 240 litre garbage bin, to act as an incentive to reduce waste to landfill 4. Trial advanced home composting systems to determine the viability of such systems to reduce the volume of food and garden waste in garbage bins, commencing in 2012/2013. 5. Support Metro Wide home composting and worm farm education programs. 6. Continue to promote home composting by providing incentives for home composting, worm farms, bokashi bins and like products; and provide information on 'how to' compost and reduce food and garden waste. 7. Promote sustainable shopping/consumption programs to reduce food wastage and run periodic workshops or incentive programs aimed at minimising food wastage.		2012/2013 2012/2013 2013/2014 Ongoing Ongoing Minimum annually 2012/2013

FUTURE DIRECTIONS		ACTIONS	RESPONSIBILITY	COMPLETION DATE
Reduction strategies		8. Advocate to state and federal government for increased responsibility for those who create future-waste, including greater manufacturer responsibility to reduce the amount of hazardous material contained in their product.		Ongoing
		9. Continue involvement with the Eco-Buy program to promote the purchase and use of environmentally-friendly and sustainable products.		Ongoing
		10. Advocate to the Metropolitan Waste Management Group to support a state wide approach to the removal of plastic bags from retail operations.		2012/2013
		11. Strengthen and better promote "Waste Wise" initiatives across Council, including at Council events and facilities.		Ongoing
		12. Develop and implement a program where stall holders at Council's festivals and events are required to have in place and utilise a basic waste management plan for that event.		2012/2013
		13. Review venue hiring and catering contracts and sporting club lease arrangements with a view to reducing waste.		2013/2014
Green Organics processing	• Support upgrade of organics processing infrastructure • Consider collection arrangements such as combined food and garden organics when suitable processing facilities are available	14. Continue to separate and process garden prunings and suitable timber at the Whitehorse Recycling and Waste Transfer Centre.		Ongoing
		15. Continue the garden organics collection service on an optional basis until such time as a viable, sustainable and accessible advanced technology organics processing facility is established .		Ongoing

FUTURE DIRECTIONS		ACTIONS	RESPONSIBILITY	COMPLETION DATE
Green Organics processing		16. Continue the promotion of the benefits of the optional garden organics service. 17. Consider expanding the garden organics service by changing from an optional to a broad based service when viable and sustainable advanced technology processing facilities are in place. 18. Consider participating in a south-eastern regional contract for a new regional composting facility to be established in south-eastern region within the next 5 years. 19. Extend or find alternative interim garden organics processing facilities to ensure garden organics from Council's bin service are recycled and kept out of landfill.		Ongoing 2015/2016 2012 2011/2012
Food organics facilities	• To maximise the recovery of food organics and avoid contaminants in the kerbside residual bins. • Support the establishment of new organics recovery infrastructure and/or significantly upgrade existing windrow compost facilities.	20. Consider supporting the Food Systems Network or similar programs that promote food production and distribution at the local level. 21. Investigate the possibility of community Worm Farming and/or community composting within community gardens, public gardens, public facilities or accessible private spaces where suitable. 22. Promote composting and food organics recycling at Council facilities wherever possible. 23. Run targeted community education programs about the importance of recovering and reprocessing food waste. 24. Prior to the expiry of the next kerbside waste collection contracts in 2019, evaluate options for the most effective and affordable collection and		2012/2013 2012/2013 Ongoing Minimum annually Interim review 2014/2015

FUTURE DIRECTIONS		ACTIONS	RESPONSIBILITY	COMPLETION DATE
Food organics		processing of food waste to divert food from going to landfill 25. Subject to the outcome of the evaluation of options to collect and process food organics, provide the appropriate bin configuration and service for collection of food organics.		Further review 2017/2018 2019/2020
Waste Policy and Waste Strategy	• Waste policy is needed to provide guidance on the entitlement to a waste service and charges for a waste service • Waste Strategy is to utilise performance data to ensure continuous improvement, and be updated when significant changes occur to Government policy • Consider the future operational and development options for the Clayton South Regional Landfill	26. Amend Council's municipal waste recovery and diversion target to 55% by 2016 27. Develop a waste service delivery policy that covers the entitlement to Council's waste and recycling services for all the community, including residents, tenants, businesses, community organisations and clubs. 28. Introduce a separate service charge to reflect the landfill levy collected for the State Government 29. Collect performance data on Council's resource recovery rates and other relevant waste and recycling trends, to feed into Council's sustainability reporting and performance review processes. Extend current waste data capture to include all Council-managed facilities. 30. Periodically review and update the Waste Management Plan in light of changes to State Government waste policy, implementation of advanced processing facilities, or other significant changes that affect the waste industry. 31. Assess the impact of the Australian Government Carbon Price Mechanism legislation on Council services and facilities once details of the scheme are known and should it pass into law.		2011/2012 2012/2013 2012/2013 Minimum annually 2012/2013 Minimum every 2-years 2011/2012

FUTURE DIRECTIONS		ACTIONS	RESPONSIBILITY	COMPLETION DATE
Waste policy and strategy		32. Continue active participation in the Clayton South User Group to manage the operations and development of Clayton South Regional Landfill. 33. As part of the Clayton South User Group, develop a business plan to consider options for the future use of the Clayton South Regional Landfill that will maximise the benefit to Whitehorse waste and recycling services.		Ongoing 2013/2014
Improved kerbside collection	• Develop and support specialised collection services for used and unwanted household products to increase the range of products and material being recovered from the kerbside • Continue to expand education and behavioural change programs in support of proper source separation of household waste and recyclables. • Further pilot projects and trials of collections from multi-unit dwellings will be needed. • Develop new kerbside waste and recycling specifications for new contracts to commence mid 2012.	34. Continue Renew collections and/or drop-off days. Review previous collections to determine the most effective and viable arrangements. 35. Prepare new kerbside waste and recycling collection contracts to commence in July 2012. New contracts are to be based on best practice performance and customer service standards, be cost-effective, and sustainable. 36. Introduce a 360 litre commingled recycled bin option with the new recycling service contract. 37. Support standardised metro wide recycling sorting criteria with education program, including advocacy for expansion of the range of materials that can be recycled through the kerbside system. 38. Participate in forums, support and implement programs for improving resource recovery from multi-unit dwellings. 39. Provide education forums for the City of Whitehorse residential and commercial sectors with respect to proper source separation.		2011/2012 2011/2012 2012/2013 Annually Ongoing Annually

FUTURE DIRECTIONS		ACTIONS	RESPONSIBILITY	COMPLETION DATE
Improved kerbside collection		40. Provide regular communication to residents regarding waste and recycling services and waste reduction. 41. Encourage communal use of at-call waste services available from Council and other providers (e.g. at multi-unit developments).		Ongoing, minimum annually Ongoing, minimum annually
Other Council Collections or programs, including electronic waste (e-waste)	• Hard waste collection systems to maximise resource recovery and provide safe collections systems • Drop-off programs for the recycling of light globes, batteries • Away from home recycling - Improved collection of recyclables at events and public places • Support programs that recover and recycle scrap metal, whitegoods and electronic waste items such as TV's, computers and mobile phones	42. Monitor hard waste collection system to ensure compliance with Worksafe guidelines. 43. Change the area-based hard waste collection system to an at-call system, including improved recovery and recycling of hard waste items. Include an option for additional collections on a user-pays basis. 44. Work with MWMG on away from home recycling programs. 45. Promote the recycling of unwanted TV's and computers as part of the proposed National Product Stewardship program scheduled for implementation in 2012. 46. Increase the support and promotion of the Mobile Muster program for the recovery and recycling of old mobile phones. 47. Continue to provide and promote services at selected Council facilities for the drop-off and recycling of light globes and batteries. 48. Consider streamlining the waste collection and resource recovery arrangements at major Council facilities by reviewing waste and recycling arrangements and seeking improved contract arrangements.		Ongoing 2012/2013 Annually Initial 'blitz' 2012, periodic thereafter Quarterly Ongoing 2012/2013

FUTURE DIRECTIONS		ACTIONS	RESPONSIBILITY	COMPLETION DATE
Other Council collections		49. Consider waste reduction and resource recovery opportunities in Council services such as litter bin collections, street sweeping and sharps collections		2014/2015
Whitehorse Recycling and Waste Centre (Transfer Station)	• Residents to have adequate access to transfer stations with range of opportunities for reuse and resource recovery • Seek to increase opportunities for reuse and resource recovery, to divert more waste materials from landfill	50. Continue the current range of resource recovery and recycling arrangements at the Whitehorse Recycling and Waste Centre, and look for opportunities to expand the range of material diverted from the general waste pit where practicable and viable. 51. Consider the introduction of used cooking oil and polystyrene recycling collections at the Whitehorse Recycling and Waste Centre 52. Evaluate the viability of establishing a drop-off facility at the Whitehorse Recycling and Waste Centre for TV's and computers as part of the proposed National Product Stewardship program scheduled for implementation in 2012 53. Investigate possible partnering arrangements with industry or community organisations to improve the recovery and recycling of re-usable items such as furniture, household goods 54. Promote the services available at the Whitehorse Recycling and Waste Centre, particularly the recycling and resource recovery arrangements		Ongoing 2012/2013 2012 2012/2013 Ongoing, minimum quarterly

FUTURE DIRECTIONS		ACTIONS	RESPONSIBILITY	COMPLETION DATE
Community engagement and education	• An education and engagement implementation strategy will need to be developed so that key messages are identified and understood by all the stakeholders and brought to the community.	55. Develop a Waste and Recycling Education Plan that includes as a minimum: a. an annual program of community awareness and education about the correct use of Council waste and recycling services b. seminars around home composting and food recycling c. Increase marketing and promotion to the community so there is an increased awareness of Council's waste and recycling services d. Waste avoidance and waste minimisation hints and tips e. Campaigns to reducing littering and dumped rubbish f. Reducing contamination in the various bin services 56. Investigate and trial a Precinct Composting program in multi-unit Developments. 57. Ensure that the introduction of any new waste services includes effective communications programs to explain the benefits and requirements of the new waste service arrangements. 58. Consider a pilot program to work with traders associations in an endeavour to encourage traders in Whitehorse to charge a nominal 5c to 10c for plastic bags distributed from their premises.		2011/12 6-monthly 6-monthly 6-monthly 6-monthly 6-monthly 6-monthly 2012/2013 2011/2012 & 2012/2013 2014/2015

FUTURE DIRECTIONS		ACTIONS	RESPONSIBILITY	COMPLETION DATE
Community engagement and education		59. Publicise to the Whitehorse community all known forward dates and locations where "Detox your Home" events are occurring in metropolitan Melbourne. 60. Investigate possible model for education program and available services to reduce disposable nappies going to landfill. 61. Focus community education programs to target the following contaminants – plastic bags, hard waste items, clothing and textiles, printer cartridges and residual domestic waste. 62. Review community grant arrangements with a view to reducing waste at events. 63. Continue to include the fundamentals of the Waste Wise program in the new staff induction program. 64. Continue to provide internal education to staff to reinforce the Waste Wise message. 65. Consider supporting partnering or regional programs and arrangements to increase the diversion of usable hard waste items from landfill.		6-monthly 2013/2014 Ongoing 2013/2014 Ongoing Quarterly 2013/2014
Market development	• Further market and industry development is required to promote the sale of higher value organics and recyclable products. • Improved education and organics processing facilities to reduce contamination	66. Specify use of recycled organics in parks ovals and other appropriate Council infrastructure where these materials are fit for purpose. 67. Conduct bin audit programs in conjunction with targeted education to reduce contamination of organics and recyclables. 68. Liaise with MWMG and industry regarding the quality of materials collected in kerbside services and at Whitehorse Recycling and Waste Centre,		2012/2013 Major bin audit every 3 years, ongoing spot bin checks Annually, or as required

REFERENCES

Metropolitan Waste and Resource Recovery Strategic Plan – March 2009

Victorian Annual Local Government Survey 2008 – 2009 – Sustainability Victoria

National Waste Policy, Environment Protection and Heritage Council, November 2009;

Our Environment Our Future: Victoria's Sustainability Framework Towards Zero Waste Strategy (TZW) 2005

FUTURE DIRECTIONS		ACTIONS	RESPONSIBILITY	COMPLETION DATE
		to ensure the value of resources recovered is as high as possible and to consider opportunities for an expanded range of recycled materials.		
Procurement of waste services	Procurement guidelines will be based on an MWMG-led model. Clusters of Councils and/or the MWMG may enter into contracts for the provision of appropriate infrastructure and services.	69. Work with the MWMG on projects and programs where regional or shared contracts and services would support Council services. 70. Continue to participate in the MWMG landfill services contract until 2015, reviewing the option to extend participation in the contract or seek alternative arrangements at least 6-months prior to contract expiry. 71. Consider participation in regional contracts that will result in advanced technology infrastructure for the processing of garden and/or food organics, pre-treatment of waste going to landfill, or other such projects that will help to achieve or exceed Council's waste diversion targets.		Ongoing 2011-2015 As needed
Product Stewardship	• Prioritise processes for recovery including electronic waste, household chemicals, mobile phones	72. Continue to participate in and promote product stewardship programs such as Detox Your Home, Mobile Muster, Byteback and the proposed National TV and Computer recycling program. 73. Consider participating in further product stewardship or priority waste programs as they become available, subject to these programs being in line with Council priorities and resources. Electronic waste is a particular priority.		Ongoing As needed

FUTURE DIRECTIONS		ACTIONS	RESPONSIBILITY	COMPLETION DATE
Product Stewardship		74. Advocate to Federal and State Government for further product stewardship programs that may help to reduce waste generation and waste collection or disposal costs. The introduction of Container Deposit legislation should be a priority.		2012 and ongoing
Resources recovery and planning assessment	• While the state government is currently reviewing the Victorian Planning Scheme, an assessment tool will need to be developed to assist in the assessment of potential sites in accordance with the revised planning provisions. • Seek opportunities to access landfill levy funding to assist the implementation of improved resource recovery	75. Participate as appropriate to ensure suitable resource recovery sites are recognised and protected, including the Clayton South Regional Landfill that is part-owned by Whitehorse Council. 76. Advocate to ensure that suitable waste transfer and processing facilities are accessible to Whitehorse Council and the Whitehorse community. 77. Seek funding from Victorian Government landfill levy funds for resources, programs and infrastructure to increase resource recovery and waste education at the Whitehorse Recycling and Waste Centre, and to introduce best practice kerbside bin collections using 80 litre garbage bins and 360 litre recycling bins		As needed As needed 2011/2012
Advanced Resource Recovery Technology (ARRT)	• Thorough research into any new technology is critical to it being considered as a marketable option to reliably process available waste streams and produce viable end products.	78. Support and assist the MWMG with quality information relating to the Council's participation in the VARRI (Victorian Advanced Resource Recovery Initiative) which is a $10 million Victorian Government initiative aimed at improving organic (food and garden) waste recovery in metropolitan Melbourne.		Annually (or as needed)

FUTURE DIRECTIONS		ACTIONS	RESPONSIBILITY	COMPLETION DATE
Advanced Resource Recovery Technology (ARRT)	• Ensure that any future decisions on the establishment of resource recovery facilities are made after consultation and consensus with metropolitan Councils to ensure their commitment to providing the long term dedicated feedstock required for these facilities.	79. Work with MWMG to ensure that the gate pricing structure for the ARRT facility is affordable by local government and builds on Council's existing collection arrangements. Council does not want to diminish the importance of avoidance, separation at source and onsite reuse within the waste stream.		As needed
Future resource recovery opportunities	• The provision of new waste recovery technology needs to be explored to help ensure Melbourne meets its municipal TZW target, through the Victorian Advanced Resource Recovery Initiative. • Initiatives to further minimise waste to landfill need to continue. • There will be a need for further pilot projects and trials, such as collection from multi-unit dwellings and "day after" collections. • MSW organics processing facilities should maximise opportunities to receive material from C&I and C&D sectors whenever possible.	80. Investigate ways for which paint can be collected at Council locations, separate from other chemicals 81. Work with MWMG to make manufacturers responsible for disposal of unused materials/ containers and E-Waste. 82. Encourage and support the Metropolitan Waste Management Group to develop guidelines for the placement of waste and recycling bins in multi-unit developments (MUD's) 83. Continue to use Sustainability Victoria guidelines for waste management at multi-unit developments and provide them to the Planning Department for inclusion in responses to applicants relating to commercial developments. 84. Advocate to State Government to establish a "Detox your Home" program host in Whitehorse on the yearly cycle and to increase the frequency of the collection		2013/2014 Annually (or as needed) 2012/2013 Ongoing 2012/2013

Table 7 - Action Plan

Action Plan will be reviewed on an annual basis and the WMP every five years.